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### An Address.<sup>1</sup>

By NEVILLE G. SUTTON,  
President of the Queensland Branch of the  
British Medical Association.

For some years past it has been customary for the incoming President to deliver his annual address on assuming office, instead of the previously established custom of the retiring President's having that privilege at the end of his term. Perhaps the change was prompted by political influence and the address expected to take the form of a policy speech, or perhaps on the other hand it was for the purpose of mitigating any criticism of the past administration, as such would hardly be forth-

coming from one about to expose himself to the same risks for the ensuing year. In any case I do not intend to expound a policy, and I can assure you that I have the profoundest respect and admiration for those who have preceded me in this office in the past few years. I wish now to draw your attention to the faithful efficiency with which our retiring President, Dr. Quinn, has carried out his duties during the past strenuous year. Many of you, I am sure, are not fully aware of the great amount of work he has done; but those of us who have been associated with him realize his energy and ability, and I feel that the Branch owes him a debt of gratitude difficult to liquidate. For myself, frankly, I do not know how I am going to live up to the standard recently set for presidents, and straightway I ask for help from both the retiring President and the President-Elect to carry on during what promises to be another strenuous year. Knowing the men, I am sure I do not ask in vain.

<sup>1</sup> Delivered at the annual meeting of the Queensland Branch of the British Medical Association, at Brisbane, on December 9, 1938.

I do not intend to inflict on you an interminable review of the activities of the Branch during the past year, with which most of you are familiar; but in view of the vital importance of recent events I wish to attempt to set before you my conception of where we stand today.

In the first place I would refer to the critical period through which the British Empire has but recently passed, when we were once more faced with the possibility of immediate war; not that I intend to enter into any discussion of that crisis, but that I may use it to point my consideration of our position as a corporate body in one of the British family of nations. There have been pointed criticism of the democratic form of government and some disparaging remarks about the inefficiency and delay in such systems, and I think we, in common with all other bodies that take an active part in the welfare of the people, should give serious thought to such criticism, and indeed examine our constitution and activities with care and deliberation, that we may make our organization more widely representative in its structure and more efficient in its function.

Comparable to the national crisis is the situation now faced by the medical profession in Australia; and that this has produced a great amount of criticism, destructive and otherwise, of the British Medical Association in Australia is obvious to all; but I would ask you all earnestly to assist in turning this opportunity to our advantage, not to indulge in useless destructive criticism, but to build a more solid structure on the foundations laid so many years ago.

The introduction of a scheme of national health insurance was not unexpected by many of our far-seeing leaders, and, as most of us remember, it was being investigated by a previous Commonwealth Government shortly before they went out of office. Fully convinced of the threat to decent standards of medical practice and health services that the future held in store, a far-seeing and sagacious Queensland medical man sallied forth from his country town about five or six years ago, and, assuming the exacting duties of a member of the Queensland Branch Council, soon became President of the Branch; I refer, of course, to Dr. Price, of Toowoomba. He conceived the plan of anticipating any political scheme for national insurance by formulating a wider, broader scheme for a complete health service based on the family unit, and he spent much time and effort in promulgating his ideals. He had a very heavy task; he travelled up and down Queensland, and perhaps a few really grasped what he was driving at; others contented themselves with the word "visionary".

However, the Queensland policy had its birth, not without considerable travail, and later it was taken to the high places in the south and eventually adopted as the policy of the British Medical Association throughout Australia. I am sure that much of the significance of this work was not at the time appreciated, and indeed it is only in the last few

months that there has been a general awakening. Of necessity the first exposition of such a far-reaching scheme must be in very general terms, later to be elaborated in detail; but from careful and thoughtful consideration of this problem have emerged some principles, few in number, but of great importance for the establishment of a health service which would meet the needs of the people and the standards that the medical profession consider desirable.

In the first place we are not in favour of an insurance scheme that makes the provision of restricted medical benefits a matter of minor importance, whilst the bulk of the revenue is devoted to the building up of a pensions fund with a considerable cash balance. The medical benefit clauses were evidently hastily conceived and drafted, and appear in the light of a sugar coating to conceal a very bitter pill from the public. The medical profession of Australia can cooperate fully only in a scheme of national insurance that is entirely separated from any scheme for the provision of a cash balance for the Commonwealth Treasury.

Then we are concerned about the quality of medical services under the proposed insurance scheme; there can be no gainsaying that the majority of our members are convinced that the general standard of practice, particularly of contract practice, in Australia today is high and definitely higher than that in England under national insurance. I do not wish to be misunderstood; I am quite aware that in England the highest grade of medical work is such that only few can equal; but I also think that the general run of panel practice is not a desirable standard for us to adopt. I am convinced that most of the work is done in a hurried way, which leads to the cultivation of the method of snap diagnosis, and a reliance on the fact that the patient will come back if unrelieved on the first try. Such a system leads to a high degree of skill in rapid spotting; but what a prostitution of modern medical teaching! Why do we train students through a crammed six-year course, inculcating the necessity for sound diagnosis based on careful history taking and thorough examination, if they are to graduate into mere "glorified commissionaires" directing patients to the right channels for their appropriate treatment, with, by the way, much confusion of traffic in the process?

An even more sinister consideration obtrudes itself. As I recently stressed, the most important single factor in the successful treatment of cancer at the present time is early diagnosis; the failure to achieve this is not always the fault of the patient, and in such cases as are missed by medical men, the error is not usually want of knowledge, but failure to make a sufficiently comprehensive examination; and I must insist that to detect many forms of cancer at a reasonably early stage it is necessary for the medical man to be continually on the alert to appreciate the significance of the unobtrusive early manifestations, and frequently he must under-

take quite extensive investigations before he can come to a definite conclusion. The panel practice of national insurance appears to me to provide a fertile field for such delays in diagnosis, yet much money is lavished on less promising aspects of the fight against cancer.

The workers of Australia, particularly in this State, have been led to expect a reasonably high standard of living; they expect a wage based on the prosperity of the industry in which they are engaged, shorter and shorter working hours, and adequate recreation. Are they to be offered a medical service of inadequate range and inferior quality?

These are the main considerations and motives that have mobilized medical opinion against the proposed scheme; not the size of the capitation fee as such, but the deterioration of the quality of service which will certainly occur. Surely, with such a cause, we can rely on the cooperation of all members, and, indeed, hope for the support of all sincere and thoughtful citizens.

To turn now to more domestic affairs; as I said earlier, I think we should consider our constitution in the light of recent criticism of democratic institutions, so that we may render it more representative and more efficient. To quote Professor Murdoch:

If the democracies fall into complacency, if they fail to turn sternly self-critical eyes upon their own shortcomings, they are surely doomed. But just here is the very core of our hope in Democracy. It is, by its very nature, self-critical.

In the past, from time to time, there have been murmurings that the Branch Council was a body dominated by Wickham Terrace specialists, and at the annual elections it was made obvious that no others need apply. May I point out how weak and futile such criticism is. The Council is an elected body for which all members are eligible, and all members have votes. But evidently in the Association we have our inarticulate masses; for in recent elections only about half the ballot papers issued have been returned; and if some of these gentlemen from Wickham Terrace had not been sufficiently interested in the welfare of their profession, and unselfish enough to devote hours and hours of their time to the problems of their fellows throughout the State, I do not know who would have done the work. A reference to the annual report will give some idea of the wide extent of the activities of the Council. But it is not so much to meet past criticisms that I bring forward this matter, as to note with considerable pleasure that the general practitioners have been spurred into activity by recent events and have organized a live and very articulate group replacing the defunct Contract Practice Section of the Branch, and in nominating some of their members for the Council they have rendered the Association a great service. I hope their activity and enthusiasm persist and do not wane with the passage of this critical period; for we know too well the burning enthusiasms aroused by calls to arms, but we also know the need for

steady unobtrusive work in the unruffled days of peace, which is necessary to preserve a sound and vital spirit throughout our profession.

Just as important is the representation of our members in the country, too far away to send their delegates to meetings of the Council. Their problem has exercised our minds for many years past, and various methods of giving this portion of our members some direct representation have been tried; I need not enumerate them in detail, but they have all proved quite inadequate. In these circumstances I have proposed that we adopt the method of an annual convention or meeting of delegates, at which representatives from all our local associations can meet the Council, and so at least once a year will there be direct contact established between representatives from all parts of the State. It is proposed that the meeting be arranged in the first place to coincide with our post-graduate week, at the beginning of June; at least three months' notice will be given of the meeting and suggestions for matters to be discussed will be called for; the Council, from this material, will draw up agenda and forward them to the local associations at least one month prior to the date of meeting. By these means we should not only bring the separate local associations into closer relationship with one another, but also give the Council an opportunity of ascertaining the views of their scattered members, and I feel sure that this will further the object of developing a more vigorous corporate life in the Branch, throughout the State, and secure for our members that direct representation of their views which we should strive to foster and which will unite us in a common policy of progress.

There is also the wider question of the constitution of the Association in Australia which has been receiving some attention, and, as you can see from the annual report, your Council has already expressed the view that they favour the establishment of an Australian Medical Association affiliated with the British Medical Association. To some, such an alteration may appear to carry more disadvantages than otherwise and indeed to be too radical a step to contemplate; so I think it fitting that I attempt to clarify the matter.

First, let me deny, in most emphatic terms, that there is any hint of disloyalty in such a proposal, and let me warn those who would read into this attitude a portent of the incipient dissolution of the British Empire that they deceive themselves and fail to see beneath the surface. Personally, I assert there is no one who is imbued with greater loyalty to the Imperial Crown than I am; nor am I one who fails to appreciate that our very existence as a free and independent people depends in fact on the benevolent protection of Great Britain. But, as I have already stated, we must strive for efficiency in organization and administration, and I am sure that the time has come when this can be achieved only by the setting up of a constitution of our own.

As far as I can see there are at least two aspects of our constitution as it stands that present diffi-



culties. The one is the distance we are from the head office and consequently the time that must elapse before we can receive a reply to any communication. This may not appear a serious matter now, when the air mail is constantly being accelerated, so that in a few years we may expect a three-day service to England; but even so the facilities are far from ideal.

The other difficulty is of much greater importance, and is one that progress cannot ameliorate; indeed, it will surely increase as time goes on. It is the variation in the legal obligations and social conditions of our respective countries which make us very conscious of the need for independence of action. Already have we had under consideration proposals which it would be impossible for us to carry out at the present moment as a Branch of the British Medical Association. In the near future, some such steps may become urgent to protect our rights and privileges, and should such a situation arise, our freedom of action would be greatly hampered, and in such a case the distance factor would increase the difficulty of making adequate representation of our needs to the parent body.

To pass now from the consideration of our activities as a corporate body to the individual conduct of our members, I think it is fitting that we should pay some attention to our standards, both ethical and scientific. To retain the position that our predecessors have won for us we must maintain a jealous guard over our professional honour and the scientific standards of our daily practice. Let us not be a party to any factional strife, nor to any individual interest, merely because we may thereby gain personal reward; but let us show that our word is our bond, our principles are unquestionable and our actions always above suspicion.

In no sphere of our daily activity are these principles of greater importance than in the writing of the innumerable certificates now demanded from us by all and sundry who often consult us for this purpose alone, to establish their *bona fides* by means of the signature of a registered medical practitioner. On such occasions we are placed in a position of trust, and we must fulfil our obligations without fear and without favour, otherwise our declarations become worthless and will soon lose the weight of authority which should attach to them. I am fully aware that statements that appear rash and unable to be substantiated are inserted in medical certificates through carelessness in composition and want of due thought; but I would insist that we should strive to make clear in all such documents what are the actual facts observed and recorded by us, acting as skilled observers, and what is mere expression of opinion, based probably on what we hear from others. This is the form used in the certification of persons of unsound mind, and whilst it is perfectly competent for a medical man to weigh the evidence, direct and circumstantial, presented to him, and to draw his conclusions, in writing the certificate he should indicate which part is plain fact and which is opinion, and preferably on what

grounds such opinion is based. If such principles be borne in mind we shall see far fewer careless and misleading statements attributed to medical men. In this connexion the shortcomings of the few always act with unmerited force on the reputation of the whole body of the profession.

In scientific medicine the outlook is encouraging, and we take considerable pride in the development of the Medical School of the University of Queensland in our midst; it is already making its presence felt, and cannot fail to be an influence of great importance in maintaining the standard of practice on a high level in this State. The more senior students are now well advanced in their work at the hospital, and increasing numbers of clinical teachers are taking part in their instruction with an enthusiasm and devotion which augur well for the future of the school. In this regard I think I express the opinion of our members when I say that they note with approval that the Faculty of Medicine is falling into line with the older faculties of the university in demanding a high standard of work from their students, so that our Medical School can take its place honourably alongside the older established schools in Australia.

Finally, I would remind all our members of the fact that our status as a scientific and honoured profession is in our own hands; that we should continue to carry out our obligations with meticulous attention to the welfare of our patients and the ordinances of the State, and in all our work we should be careful and thorough, and not satisfied with the "good enough" attitude which is apparently becoming the curse of many of the public and private undertakings of this continent.

#### THE CASE FOR INDIVIDUAL ISOLATION: ITS USE IN INFECTIOUS DISEASES AND IN THE CARE OF INFANTS.

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IN the management of infectious diseases and in the care of infants, especially if debilitated, who are notoriously prone to cross-infection, it has long been recognized that some form of isolation is a *sine qua non*. It is the method of isolation employed that has proved the controversial point during the last few years.

As the present time is one in which hospital construction is at its peak, it was thought that a review of the literature on this important problem would not be without interest.



## Methods of Isolation.

What methods exist for isolating a patient? Three methods have been used with varying amounts of success. The first is "bed isolation": the patient, irrespective of his disease, is placed with all the other patients in a large, airy, well-ventilated ward; but an imaginary barrier is erected around the bed and an elaborate system of "medical asepsis" is enforced. This method has of course innumerable drawbacks, and with the march of time its deliberate practice has been superseded by the other two which are to be described. It is probable, nay, almost certain, that, in view of recent developments, if the supporters of this method were able to express their ideas at the present moment, they would, except in special circumstances, admit its limitations and support the more modern methods; but it is instructive and interesting to study their means of isolation and the success or otherwise that was obtained.

The work of Rundle and McIntyre<sup>(1)</sup> is given prominence, not because they were the original or only workers in the field. Many distinguished medical workers in infectious diseases before them, and contemporaneous with them, have used the method and have paved the way for further research. Their work, however, is easily accessible and suffices to give the student an idea of the history of methods dealing with infectious diseases.

C. Rundle,<sup>(1)</sup> operating at Fazakerley, Liverpool, laid down in 1922 the following rules which are on printed cards for the nurses to digest, since, after all, the success of the method is largely due to the discipline and efficiency of the nursing staff. The method may be unfamiliar to those not *au fait* with the subject, and so will be described in full.

Coats (gowns) to be worn for every purpose and hands washed (using nail brush) after their removal.

Feeding and drinking utensils to be rinsed and placed, immediately after use, into the kitchen sterilizer. They must not be laid down in the sink in the kitchen or elsewhere. Coats must not be worn in the kitchen, but the nurse should return to the bedside bowl for washing purposes after taking out the feeding utensils, etc.

Bed-isolation crockery must be distinctive or separately marked.

There must be separate and marked sanitary utensils, lavatory cloths, bath blankets, etc.

Coats must be worn when removing clothing, bedding, sanitary utensils, etc., to the lavatories, the coat to be subsequently removed at the bedside and the hands disinfected.

Separate washing bowl, towel, nail brush, and thermometer to be used in cases of chicken-pox, measles, enteric fever, and in any case where the treatment is likely to be frequent or prolonged.

Patients must not be allowed to mix with other patients, sit at common tables, or use lavatories.

Bedside bowls to be immediately emptied and refilled after use. For this purpose the nurse must not wear coat to lavatory. The coat must be removed and hands washed, using nail brush, before refilling bowl.

All temperatures to be taken in axilla and thermometer washed in lysol after use.

No toys, books, or papers to be allowed.

The details will differ with different men in different institutions; but the principles remain the same. It calls for team work between the medical

and nursing staff and an infinite capacity for taking pains. Rundle says:

In probably no other branch of her professional work is a nurse called upon to display so large a capacity for detail and administrative control as in bed-isolation of cases of infectious diseases.

McIntyre,<sup>(1)</sup> following on the work of Biernacki, who was a pioneer in this respect, was another great advocate of this method. He worked at Plaistow, London. As the strict observance of all the details means a good deal of extra work for the nursing staff, not more than two patients were isolated in this manner in a main ward at one time. Again, each barriered bed is supplied with a complete outfit of everything required in the treatment of the case, so that the patient is practically in a separate ward except as regards the common air supply. Separate gowns are worn by the medical officers and nurses while attending the patients, and the hands are dipped in disinfectant lotion before the patient or any of his equipment is touched and again when the attendant leaves the bedside.

The second method, or system of "disease isolation", in which all patients with a particular infectious disease are placed in the same ward, is sufficiently well known to need no further comment.

Barrier nursing of course is an integral and an essential part of the method, as it is of any satisfactory method of nursing patients with infectious disease.

The third system has been given the name of "individual isolation" and includes the "cubicle system" and the "separate room system". There are minor modifications of these, such as partitions seven feet high or partitions up to the ceiling in the former, and, in the latter, rooms with outside communication only, or rooms supplied by a central corridor. These will not be dwelt upon. But individual isolation means more than simply placing walls between one patient and another. Stimson<sup>(2)</sup> has given the following definition:

By individual isolation is meant the segregation of each patient in a separate unit or infected area, the care of each by only those who are especially gowned and free from other contamination, and the concurrent disinfection of any contaminated individual or object before contact is made with another patient.

It will be seen that individual isolation includes barrier nursing within its scope.

At this stage it would be as well to ask oneself how infection passes from one patient to another. It is well known that different diseases have their own favourite method of spread; but the following methods as outlined by Allison and Brown<sup>(3)</sup> include the principal pathways:

I. Via air in dry dust particles.

II. By droplet infection, for example, coughing and sneezing.

III. By direct contact.

IV. By indirect contact:

(a) Via an intermediary, such as medical attendant, nurse, another patient.

(b) Via toys, utensils *et cetera*.

V. By a true carrier among the staff.

It is obvious that to overcome or place barriers to these methods of spreads, mechanical and architectural devices will be needed to deal with the first two, and the efficiency and conscientiousness of the medical and nursing staff should be the greatest safeguard against spread by the three last pathways.

#### *Bed Isolation.*

Rundle,<sup>(3)</sup> to justify his method of bed isolation, claimed that over a period of two years, only two out of 741 patients developed an infectious disease. Twenty-eight of the patients were healthy babies (admitted with mothers who had puerperal fever), and many were non-infective, mainly children. He did not think that there was a great danger of either mild or unrecognized attacks of infectious disease or the occurrence of true carriers among the staff. He confessed some anxiety from transmission of infection by flies in the summer weather. There was no mention of the number of cases with complications and sequelæ to the infectious disease, nor of the mortality rate.

Rundle and Burton,<sup>(4)</sup> discussing the method of spread of infection, said in 1912: "In the light of the very satisfactory results obtained by the bed isolation system as compared with those of cubicle isolation, it may be fairly argued that the danger of spread of infection in a hospital ward by means of 'aerial infection' is to be disregarded for practical purposes." They therefore question "whether glass partitions do not involve a false security in regard to the nursing staff, rather than afford that protection to the patient which is claimed for them".

Rundle grudgingly admitted that "septic scarlet fever would appear to be the sole condition which cannot be adequately dealt with by the method of bed isolation". But Biernacki, Harries,<sup>(14)</sup> Thomson<sup>(12)</sup> and McIntyre<sup>(1)</sup> thought, and it has long been agreed upon, that chicken-pox and measles are also impossible to control by this method. They were able to control, with a high degree of safety from cross-infection, such diseases as diphtheria, mumps, whooping cough, rubella, typhoid, erysipelas and general septic infections. Whilst paying a tribute to Rundle's splendid figures, Thomson,<sup>(12)</sup> from his failure, and that of others, to corroborate such findings, was forced to the belief that Rundle's patients suffering from chicken-pox and measles were admitted to the ward in a late stage of the disease, a time when the infectiousness is known to be on the wane. This was deduced from the fact that Rundle's patients were admitted from outside the hospital, while Thomson's and McIntyre's patients were largely drawn from other departments of the hospital. Another explanation of Rundle's success was the great dilution of infectious patients with non-infective patients and adults.

Thomson<sup>(12)</sup> was unable to control scarlet fever, measles and chicken-pox under bed isolation and also had failures with whooping cough and mumps. Whilst not denying its usefulness in some respects,

he criticized its use for the control of all infectious diseases.

Goodall<sup>(13)</sup> described the results of bed isolation in a ward of twenty beds at the North-Western Hospital, London. Nine hundred patients were treated in this ward over a period of three years and four months. There were 31 cases of cross-infection during that period, or 3.4%. Of these, nine were of measles, six of chicken-pox, seven of scarlet fever, six of diphtheria, two of whooping cough and one of rubella. The cases of chicken-pox had their origin in a patient who had been admitted in the incubation stage. Goodall was of the opinion that it was unsafe to treat all patients with measles and chicken-pox, and most patients with severe scarlet fever, diphtheria and whooping cough, in bed isolation wards during the acute stage of the disease.

McIntyre<sup>(1)</sup> found the method most useful, especially for patients admitted with septic discharges and spreading skin infections. Its employment keeps the main wards clean and saves the transference of such patients to side wards or isolation blocks.

It must be remembered that, profiting by the experiences of their predecessors, men like Biernacki, Harries, Rundle, McIntyre and Thomson, developed an elaborate system of protection and nursing care which does them credit, but would possibly prove difficult to imitate, and even in their hands revealed its limitations. Even the enthusiastic Rundle admits that it is extremely difficult to obtain a staff that can be relied upon to carry out the conditions necessary. The position is summed up admirably in a recent report by Parsons<sup>(15)</sup> on London County Council hospitals for 1936.

Bed isolation, where every patient is nursed in barrier, may make it possible to segregate within a single ward any acute specific infection (other than early measles and chicken-pox), all types of extraneous non-specific conditions (such as bronchopneumonia and otitis) and patients under observation pending diagnosis, but it is extremely exacting for the staff, and the added stress may readily lead to physical breakdown among the nurses. Bed isolation therefore cannot be regarded as a normal state of things unless the hospital can rely upon a succession of nurses well trained in general surgical work and especially in methods of asepsis. Such a staff is not easy to recruit and retain in these days.

It is the old story of recognizing the fact that a method which brings success to one man or group will not necessarily be followed by success under another's direction. We must always be on the alert for a method which is as fool-proof as possible.

There are few of us, however, with the courage, even if we possessed the inclination, to nurse our infective patients alongside our non-infective ones. Increase in hospital accommodation and the establishment of infectious disease hospitals have played a part in popularizing the "disease isolation" method, and this method of placing all patients suffering from one particular disease in a separate ward or compartment has been in vogue for many years.

*Individual Isolation versus Disease Isolation.*

Recently suspicion has been cast on this method of disease isolation, and anxiety to reduce mortality and morbidity has led to a search for improvement in our management of such cases. The literature deploring the use of the method of disease isolation in cases of streptococcal infection, especially scarlet fever, is overwhelming. Biernacki, Harries, Rundle, McIntyre, Thomson, and their predecessors, it will be remembered, could not adequately control this common infectious disease. It is probable that the system of multiple-bed wards increases the complications of other infectious diseases, so leading to greater morbidity and lengthier stay in hospital. The evidence against the streptococcus is increasing every year. *Streptococcus pyogenes* (hæmolyticus) is frequently the factor in tonsillitis, pharyngitis, otitis, mastoiditis, sinusitis, erysipelas, pneumonia, scarlet fever and puerperal septicæmia. The impetus was perhaps given by the serological classification of *Streptococcus pyogenes* by Griffith,<sup>(6)</sup> who was able to demonstrate more than twenty different types. This opened the way to new possibilities, and it was not long before Allison and Brown<sup>(9)</sup> were able to show that a scarlet fever patient infected with one strain of the hæmolytic streptococcus of scarlet fever could become infected with another strain, and that the great majority of complications occurring after the second week in hospital in multiple-bed wards were due to new infection. In other words, patients in a general scarlet fever ward freely exchanged their streptococci.

Allison<sup>(16)</sup> sounded the death knell of multiple-bed wards in the management of streptococcal infections when he published the following conclusions:

1. Patients nursed throughout the illness in cubicles or chambers show no change of serological type of the infecting streptococcus. Segregation of patients in small wards according to the serological type of the infecting streptococcus showed that if a change of type occurred it was due to the introduction of fresh infection by a member of the ward staff.
2. Infection with one serological strain of *S. pyogenes* does not necessarily protect a patient against infection with another type.
3. So-called relapse in scarlet fever is due to fresh infection with a streptococcus picked up from another patient in the ward and differing in serological strain from that causing the primary infection.
4. In multiple bed wards for scarlet fever 50% of the patients become reinfected with one or more fresh types of *S. pyogenes* during their period of detention in hospital.
5. Complications in scarlet fever occurring during the third week and subsequently in multiple bed wards are in the great majority of cases caused by reinfecting types of *S. pyogenes*.

The oto-rhino-laryngologists are not unmindful of the danger of spread of infection in streptococcal cases. McKenzie<sup>(7)</sup> gives an admirable discussion on the frequency of cases of erysipelas and scarlet fever following operations on the ear, nose or throat, and stresses the important part played by cross-infection. Okell and Elliot,<sup>(8)</sup> in an even more convincing article, stress the important part

played by cross-infection in oto-rhinological wards. They furnish bacteriological proof of the prevalence of cross-infection, and show that it may be latent (as shown by the growth of organisms from a swab in the absence of obvious symptoms) or manifest (by the development in a neighbour of sore throat, otitis, adenitis or merely rise in temperature and pulse rate for forty-eight hours), and the latter may lead even to a fatal issue. They recognize, however, the expense entailed by individual isolation and favour a method that has been used successfully by many earlier authorities in infectious diseases, in which the isolated patient is surrounded by a three-piece glass screen, seven and a half feet high, and the same precautions are taken as with bed isolation. They conclude that "the screens are an effective though imperfect barrier against droplet infection", and "they are also a constant reminder to nurses and others that special care must be taken and they effectively discourage the approach of other patients". "Without doubt", they continue, "the most important single factor in the prevention of cross-infection is the care and instructed intelligence of the nursing and resident medical staff."

There is no doubt that the mixing of patients with oto-rhinological diseases, such as purulent otitis, mastoiditis and tonsillitis, with "clean" surgical or medical patients is a retrograde step.

If air-borne infection by dust particles is accepted in certain diseases, then the position of the advocates for multiple-bed wards becomes intolerable in these diseases. Air-borne infection by droplets has always been a well-recognized means of spread; but Allison and Brown<sup>(9)</sup> by exposing blood-agar plates for short periods in scarlet fever and measles wards and examining the resulting cultures, were able to show a surprisingly high degree of infection, by means of dust particles *et cetera*, with *Streptococcus pyogenes*. The problems arising from these findings were being studied and evidence was accumulating to show the necessity for combating them so that there would be fewer complications, a diminution in length of stay in hospital and better end-results.

Cruickshank<sup>(10)</sup> was able to furnish examples of this means of spread. Whilst agreeing on the possibility of this method of spread, Scholes<sup>(12)</sup> has frequently pointed out its limitations. He reminds us of the action of sunlight on such particles, the rapid dilution as a result of drying and the movement of air in a well-ventilated ward, and so (and this is the crux of the matter) the unlikelihood that the dosage of infected material would be sufficient to initiate disease. If this method of spread plays any part whatever, it is obvious that the days of the multiple-bed ward in the management of a large proportion of cases are numbered.

Stimson<sup>(11)</sup> says that "most of these [cases of] measles or pneumonia are due to streptococci which can be picked up from any infected neighbour, not merely from older pneumonia cases, so that the



number of other pneumonia cases to which they are exposed is of little importance".

It has always been the policy of our profession to profit by experience, and though developing on conservative lines, to prosecute a relentless investigation into possible methods of preventing disease and its consequences. Infectious disease hospitals cannot by any manner of means be accused of lagging behind the remainder of the medical world in this respect. On the contrary, it may be said that their officers are ever alive to new developments and are always on the alert to incorporate new and successful researches in the management of cases reaching their institutions. Not infrequently, however, it is old methods that are revived and not a new discovery that is thrust upon a waiting world. Such, too, is the case with individual or unit isolation; for the first efforts at individual isolation were evidently those of Grancher,<sup>(1)</sup> in about 1889, at *Hôpital des Enfants Malades* in Paris. He isolated the four corners of a room and insisted on the boiling of dishes and disinfection of bed-linen *et cetera* in steam under pressure. Gowns were to be donned before one entered his isolated "box" and he insisted upon much scrubbing of the hands. This apparently was in answer to the Archambaults' remark in 1880, that at this hospital "one does not die of the illness which brought one there, but of that which one contracted there". Hutinel, in 1894, no doubt inspired by Grancher, created at *Hôpital des Enfants Assistés* in Paris more complete cubicles with glass partitions, and when the Pasteur Hospital was opened in 1900, the authorities were so impressed that this method was agreed upon. Stimson<sup>(2)</sup> thinks that Charles V. Chopin was responsible for introducing the method into America in 1910 and observes that since then the cubicle system has spread, not only to other isolation hospitals, but also to many general hospitals where children are cared for.

Lichtenstein<sup>(3)</sup> studied 360 patients suffering from scarlet fever, of whom half were treated in an individual isolation ward, with one or two patients to each room, and the other half in the ordinary general ward. Both fever (represented by temperature chart) and local complications, especially adenitis and otitis, were much less common in the isolation ward than in the general ward. He also showed that individually isolated patients on discharge were much less likely to spread the disease than patients treated in a general ward.

Stimson<sup>(2)</sup> gives an admirable discussion on individual isolation. He showed that less than half as many measles patients per hundred contracted pneumonia in the Willard Parker Hospital, New York, as before individual isolation. He furnishes statistical proof to show that this method has: (i) diminished the likelihood of cross-infection; (ii) decreased the incidence of secondary infection, that is, complications such as bronchopneumonia and *otitis media*; (iii) diminished the length of stay in hospital. He was referring to the management of

the common infectious diseases: measles, diphtheria and scarlet fever.

Duncan Forbes<sup>(4)</sup> thought that the mortality of patients with measles nursed in multiple-bed wards was so high because of rapid dissemination throughout the ward of organisms giving rise to bronchopneumonia, that unless they could be nursed in cubicles or under open-air conditions, they would be better off at home.

Peters<sup>(5)</sup> studied results obtained from two groups of patients from poor homes with measles. One hundred and sixty-seven children were nursed in a large ward of 26 beds. Twenty-three died—a mortality rate of 14%. One hundred and fifty unselected patients were treated in an isolation ward containing four cubicles with four beds in each. Of these only six died—a mortality rate of 4%.

Allison and Brown<sup>(6)</sup> showed that reinfection in scarlet fever is much more common among patients nursed in multiple-bed wards than in cubicles or wards confined to infections with a single serological strain. By reinfection is meant secondary infection from another strain. Clinically this might be latent (that is, no clinical sign but growth of organisms from a swab) or manifest, it being manifested by various signs, such as increase in pulse rate for 48 hours or rise in temperature for 24 hours, complications, such as coryza, tonsillitis, cervical adenitis, otorrhoea, or the complete picture of scarlet fever (relapse). They discuss the various systems of nursing patients in isolation hospitals and suggest that scarlet fever patients should be nursed in cubicles if possible. Failing this they should be nursed by the bed-isolation method in multiple-bed wards. By the setting aside of small wards it might be possible to keep together patients who are all infected by the same serological type of *Streptococcus pyogenes*; for example, patients from a milk-borne epidemic.

Scholes,<sup>(10)</sup> at Fairfield, has pointed out the failure of multiple-bed wards in the management of streptococcal infections, especially scarlet fever in the convalescent stage. He sketches a plan of how, in view of recent discoveries, this may be combated, especially in the management of small children in whom cross-infection is so devastating. This plan is worth quoting in full.

1. Individual isolation of all patients until typed, either in cubicles or by barrier nursing in small wards or standard wards. Whilst typing is proceeding, the highest degree of nursing must be maintained.

2. Segregation of patients according to type in wards of suitable size, according to the number of patients infected by each type.

3. When the walking convalescent stage is reached, segregation according to type in separate convalescent wards. Separate open-air playing areas or separate periods in playing areas for each type.

By these means it is hoped that "the great majority of young children with uncomplicated scarlet fever will make an uninterrupted recovery and be ready to go home after a stay in hospital of little more than three weeks"; and, furthermore,

"that the state of those in whom infection is prolonged, now so often punctuated by a succession of complications and cross-infections, will at the least be a rare instead of a common feature".

When it has to be decided what form individual isolation is to take, it is interesting to review Caiger's findings at South-Western Fever Hospital, London, in 1911. He treated 984 patients by cubicle isolation. These were as follows:

Disease.	Number of patients.
Scarlet fever .. .. .	461
Rubella .. .. .	131
Diphtheria .. .. .	81
Measles .. .. .	71
Whooping-cough .. .. .	34
Chicken-pox .. .. .	9
Influenza .. .. .	7
Enteric fever .. .. .	6
Mumps .. .. .	2
Non-infectious diseases .. .. .	179

Cross-infection occurred in 33 cases, as follows:

Disease.	Number of patients.
Scarlet fever .. .. .	16
Measles .. .. .	8
Chicken-pox .. .. .	6
Rubella .. .. .	2
Diphtheria .. .. .	1

He concludes:

As a result of four years' continuous observations and from inference based on general experience I am of the opinion that cubicles as opposed to self-contained rooms are unsuited for the treatment of small-pox, chicken-pox and measles during the acute stage of the illness, and there is apparently some risk in the case of septic scarlet fever. On the other hand, scarlet fever if not of a septic type, diphtheria, measles in the post-eruptive stage, rubella, whooping cough, mumps, influenza, enteric and probably typhus fever can be treated without much fear of accident.

He stresses the importance of "aseptic" nursing as an integral part of the method.

In the discussion that followed the presentation of this address, D. R. Lawrence, who was in charge of an infectious diseases hospital at Walthamstow, where separate compartments were in use, said that during two years there had been no case of cross-infection.

Since 1915, that is, during 23 years at Fairfield, Scholes<sup>(20)</sup> states that several thousand patients, including patients with all types of infectious disease, have been treated in single rooms. Chicken-pox gave rise to practically the only cross-infection.

Thomson<sup>(21)</sup> was unable to prevent cross-infection with chicken-pox in cubicle and cell wards, which have internal means of communication between the cubicles or cells, that is, separate chambers with a central corridor. However, he was successful when he used single rooms with no internal communication, the door of each opening to the outer air or to a verandah. Goodall<sup>(22)</sup> reported similar findings, but was inclined to attribute spread when it did occur in such cases to some omission on the part of the staff.

#### Individual Isolation in the Care of Infants.

The necessity for individual isolation in some form has continually been emphasized by

pædiatricians and experts in infectious diseases, in the management of groups of children and young infants, especially the newly born, whether suffering from infectious or non-infectious disease or no disease at all.

Many instances of an outbreak of infection amongst newly born and young infants have been reported in the literature, and no pædiatrician of experience can fail to recall similar tragic cases that have come under his notice.

Rice, Best, Frant and Abramson<sup>(23)</sup> present a preliminary analysis of very frequently fatal diarrhoea that has occurred among new-born babies in the nurseries of eleven lying-in institutions in New York City from July, 1934, to December, 1936. Among 3,672 live-born babies, 505 cases of the disease occurred—a morbidity rate of 14%. Of the sick infants, 234 died, a mortality rate of 64%.

Abt,<sup>(24)</sup> commenting on this article, says:

Physicians and hospital administrators do not seem to feel sufficiently the responsibility of placing a group of infants into so-called nursing wards. Slight errors of administration of such wards or slips in the best-intentioned technique not infrequently cause disastrous epidemics. A stricter isolation of these infants would diminish the incidence of these frequently recurring hospital tragedies.

Schick and Karelitz<sup>(25)</sup> publish the results of some experiments with cubicle nursing and conclude that cubicles are not only suitable for general use in infants' wards, but especially for the new-born babies' wards of maternity hospitals.

Spence,<sup>(26)</sup> in a noteworthy observation on ward and dormitory infections, points out the frequency with which infection is allowed to progress under the cloak of "feeding disorder" in infants. He emphasizes how infections that are comparatively innocuous to older children may be quickly fatal to those of more tender age, especially if they are thin and underweight. He goes so far as to say: "The susceptibility of infants is so great, the spread of infection in their wards so rapid, and the results so serious that it were better if each infant were placed in a separate ward." And to this, most pædiatricians of experience will agree.

Scholes<sup>(26)</sup> regrets the instances, well known to us all, of children with pneumonia, *otitis media*, tonsillitis, gastroenteritis *et cetera* being nursed in the middle of a full ward in a general hospital, and reasons that if the danger is admitted it follows that the design, equipment, medical and nursing arrangements and practice of the modern fever hospital must be introduced into the children's hospital to a greater extent than has been done in the past. "The principles of barrier nursing in gastroenteritis and pneumonia", he says, "are just as important as they are in diphtheria or scarlet fever, and the provision of cubicles and/or small isolation rooms and wards on a far larger scale than at the present time must be a feature in the children's hospitals of the future."

Dobbs and Kempthorne<sup>(28)</sup> were concerned with the control of infection in sick children's wards.



They advised, *inter alia*, an admitting ward of separate cubicles, with an examination room and with its own nursing staff, kitchen and sanitary arrangements, and, in the hospital proper, small wards of four to six cots and a balcony with one or two cubicles to each ward for the nursing of infective patients. They pointed out the difficulty of converting old buildings into isolation wards and at the same time maintaining efficient ventilation. They thought that in some cases greater value would be obtained by the addition to the ward of two or three cubicles, a number of movable glass screens and the adoption of adequate spacing of the cots. Each cubicle, they state, should have a window, a washing basin, and a floor space of ten by ten feet, which allows nursing around three sides of the cot.

The *Lancet*, February 18, 1933, in a leading article, describes an attempt being made at Basle to solve the problem of cross-infection in children's hospitals. One feature of the new hospital there was the substitution of small sick rooms for large wards. Although the single-bedded room as used at the Pasteur Hospital was recognized as the ideal, the expense of such an arrangement precluded its use. Two-bedded rooms were constructed with the exception of a few four-bedded rooms for older children or surgical cases. Glass walls were the order to facilitate supervision and to prevent the "isolation feeling". Each room, which is completely self-contained as regards lighting, heating and sanitary and nursing appliances, has an entrance from a corridor and an exit onto a balcony facing south, the balcony being subdivided by low glass partitions. Abundant sunshine and fresh air without draughts are provided for by high double windows with three divisions and glass doors with panels which may be readily opened outwards or inwards. Three adjacent rooms constitute a complete nursing unit staffed by a sister and a nurse.

Wieland,<sup>(27)</sup> who was in charge at Basle, considered that during the two years' working of the hospital the system proved most successful in minimizing infection.

Many will contend, and indeed Catherine Chisholm<sup>(28)</sup> conveyed as much in a letter to *The Lancet*, that equally good results would be obtained in larger wards, provided one had good ventilation, adequate bed space and good nursing and medical technique. The results obtained, however, with newly born infants and young children by such means have left much to be desired, as Spence<sup>(24)</sup> and Brenneman<sup>(29)</sup> have pointed out, and it is becoming more and more realized that some such arrangement as that carried out at Basle must play a big part in the construction of children's hospitals of the future catering for these tender age limits.

#### Difficulties with Individual Isolation.

It is evident then that there is gradually accumulating a great deal of evidence to show that individual isolation is the best method of treatment for infectious diseases, especially streptococcal infections, and for the nursing of young infants. Why, then, are we so tardy about setting our house

in order? It is obvious that financial considerations have for a long time been a great drawback. The increased space required, the high cost of building such cubicles or rooms, and the necessary increase of the nursing staff, along with the necessity for greater supplies, have been obstacles difficult to overcome. Many assert, too, that on older children the solitude of single rooms is found to have a depressing effect, and the patient is not in that frame of mind necessary for satisfactory convalescence. There is the difficulty, too, that with closed separate units the nurse may not be able to keep a watchful eye on the patients and attend quickly to their wants. The fact that the partition may give the nurse or attendant a false sense of security and lead her to relax in other respects is another argument advanced by many.

In times of financial stringency, such as the years we have just passed through, there may be some argument for the first objection. But surely the retort is "Penny wise and pound foolish". At least when we are building new institutions for the care of the sick the extra cost entailed is well worth while. The replacement of new wards for old ones may not be so easy to accomplish. The need for an increase in the nursing staff is probably present under any system even if it is the health of the nurses only that we aim at safeguarding. After the initial outlay, the necessity for increased supplies should be no greater.

The second argument is a real one, but not sufficiently powerful to carry great weight. Moreover, the shorter stay in hospital diminishes the likelihood of depression.

The increase in the staff and possibly the presence of glass partitions would deal adequately with the third argument. The fourth reason against the method of individual isolation is theoretical. With Okell and Elliot,<sup>(3)</sup> I feel that the presence of a real barrier instead of an imaginary one, rather than giving a false sense of security, only tends to emphasize the necessity for meticulous precautionary measures, simplifies the method of barrier nursing, minimizes the possibility of error, and warns against interference from outside.

#### Conclusions.

The greatest single factor in the prevention of spread of infection is still a well-disciplined, conscientious and efficient nursing and medical staff religiously maintaining a system of barrier nursing.

Individual isolation is an essential part of the management of patients suffering from scarlet fever and other streptococcal infections.

With the other infectious diseases, more experience and an honest comparison of results with and without individual isolation is necessary; but the evidence points to the fact that with measles in the catarrhal stage and chicken-pox in its early stages, especially, better results would be obtained by some form of individual isolation.

Individual isolation is a necessary factor in the case of many oto-rhinological diseases. The patients



should not be nursed in a general medical or surgical ward.

It would appear, too, that in the case of newly born children, infants and young children, some form of individual isolation must be considered by children's hospital medical staffs and architects of the future.

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#### NOTE ON A SERIES OF LABORATORY INFECTIONS WITH THE RICKETTSIA OF "Q" FEVER.

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IN November, 1937, one of the authors (F.M.B.) suffered a fairly acute febrile illness lasting four or five days. Rather severe headache and slight discomfort in the upper part of the abdomen were the only symptoms of note, apart from those common to all mild fevers. There were no catarrhal symptoms, and no history of contact with any current infection. It was thought possible that the fever was a result of laboratory infection, either with influenza virus or the "Q" fever Rickettsia. Blood was taken about a fortnight after the illness and tested for antibodies corresponding to these two microorganisms. No increase in titre of influenza virus antibody had appeared, but the serum gave a pronounced agglutination of a "Q" fever rickettsial emulsion. The diagnosis of the illness therefore appeared to be obvious; but to our surprise, a sample of serum taken before the illness also agglutinated the Rickettsia.

For the last three years blood samples have been taken at intervals from several members of the laboratory staff, and serum has been preserved for studies on influenza antibodies. A series of such sera from F.M.B. were tested, with the results shown with others in Table I. It is obvious that infection occurred some time before May, 1937. The only illness which might be taken as "Q" fever was an attack of "influenza" while the victim was in New Zealand during January, 1937. This was not an influenza virus infection, and the absence of reaction of an agglutination test on serum taken a month after the illness renders it very unlikely that it was "Q" fever. During the period between February 17, 1937, and May 1, 1937, when the infection presumably occurred, no illness of any sort was experienced.

In view of this result, an examination was made of sera from all persons who had been working on the floor where "Q" fever experiments had been carried out and on which the inoculated mice were kept. Several of these sera reacted to agglutination tests, and in every case we were able to examine a sample taken earlier, which did not react. It is unfortunate that no attempt was made to isolate the Rickettsia from the blood of those subjects who showed definite symptoms.

Table I contains all the relevant data. It will be seen that the only definite facts which are available concern the serological tests. The unusual circumstances, however, which allowed us in every instance to have a non-agglutinating serum from the same individual, make it perfectly clear that

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TABLE I.

Subject.	Date.	Agglutination.				Notes.
		1:10	1:30	1:100	1:300	
F.M.B.	November 5, 1936. February 17, 1937. May 1, 1937. December 3, 1937. May 5, 1938.	- +++ +++ +	- - -	- - -		Bacteriologist working with "Q" fever from July to December, 1936, and October, 1937, to May, 1938. Short fever during January, 1937 (not influenza). Fever resembling "Q" fever, November, 1937.
M.F.	April 21, 1937. June 1, 1937. December 14, 1937. May 4, 1938.	- +++ +++ +++	+++ + +	+++ - -	-	Bacteriologist working with "Q" fever since December, 1936. No illness.
N.M.	April 20, 1937. December 14, 1937. May 5, 1938.	- +++ +++	± -			Laboratory assistant handling "Q" fever mice since December, 1936. Felt sick with severe headaches for ten days in April, 1937.
W.M.	April 23, 1937. December 20, 1937. May 5, 1938.	- +++ +	+ -	-		Secretary working on same floor as laboratory workers. Sharp febrile illness lasting one week and clinically resembling "Q" fever, end of November, 1937.
D.L.	December 4, 1937. May 5, 1938.	- +++	-			Bacteriologist not working with "Q" fever. Slightly sick with headaches for a few days, November, 1937. Quite well during 1938.

actual infections with the *Rickettsia* occurred. There can be little doubt that the illnesses of N.M. (in April, 1937) and of W.M. (November to December, 1937) were actually "Q" fever. It is possible, but unlikely, that the fever experienced by F.M.B. in January, 1937, was "Q" fever which failed to produce any agglutinin until a month or more afterwards. More likely the infection was entirely subclinical, as were those of M.F. and D.L.

Protection tests on mice were also carried out with some of the sera according to the technique described in a previous paper. The results are given in Table II and show high protective power in sera

TABLE II.  
Mouse Protection Tests.

Serum.	Dilution.	Presence of <i>Rickettsia</i> in Mice.
F.M.B. (May 5, 1938) ..	10 <sup>-1</sup> 10 <sup>-2</sup> 10 <sup>-3</sup>	- , - , - , 1 dead. <sup>1</sup> - , - , - , - + , + , + , -
M.F. (June 1, 1937)	10 <sup>-1</sup> 10 <sup>-2</sup> 10 <sup>-3</sup>	- , - , - , - - , - , - , - + , + , + , ± <sup>4</sup>
W.M. (December 20, 1937)	0 10 <sup>-1</sup>	+ , ± , - , - , - , 1 dead. + , ± , - , - , - , -
Normal serum, Control 1 and 2 .. ..	10 <sup>-1</sup>	++ , + , + , +
Normal serum, Control 3	0 10 <sup>-1</sup>	++ , + , 1 dead. <sup>2</sup> ++ , + , ±

<sup>1</sup> Non-specific deaths, probably due to *Bacillus pseudo-tuberculosis rodentium* infection.

<sup>2</sup> ++ = *Rickettsia* found in every two to three microscopic fields.

<sup>3</sup> + = *Rickettsia* present, but not in large numbers.

<sup>4</sup> ± = Very few *Rickettsia* present.

F.M.B. (May 5, 1938) and M.F. (June 1, 1937). Serum W.M. (December 20, 1937) gave a less definite but probably a significant result.

The mode of infection has not been definitely determined. Since two of those infected have never worked with the organism, and one of them, W.M., has been entirely engaged in clerical work, carriage of the infection by some freely moving arthropod vector is strongly suspected. Mice have been used as laboratory animals in practically all our work, and the human infections must have arisen eventually from these. Two ectoparasites are present in our stock of mice; the common mouse louse, *Polypia serrata*, is almost always to be found in small numbers, and a blood-sucking mite, *Lyponissus bacoti* Hirst, has appeared at times in large numbers. At other times the stock appears to be free from this parasite. Circumstantial evidence points strongly toward the mite, which moves freely and is known to bite human beings, as the responsible vector; but no experimental evidence of its capacity to transmit infection has been obtained.

#### Summary.

1. A series of mild or subclinical laboratory infections with "Q" fever is described.

2. The infections were recognized by serological tests—ricketsial agglutination and protection tests in mice.

3. A mite, *Lyponissus bacoti* Hirst, is suspected of being the responsible vector from experimentally infected mice.

#### Acknowledgement.

We are greatly indebted to Mr. H. Womersley, of the South Australian Museum, for the identification of the mite referred to.



# A FURTHER SERIES OF LABORATORY INFECTIONS WITH THE RICKETTSIA OF "Q" FEVER.

By D. J. W. SMITH, H. E. BROWN and E. H. DERRICK,  
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THE "Q" fever virus was first brought to the laboratory in September, 1935, when guinea-pigs were inoculated with blood and urine from a patient. The investigations have been actively carried on since at a steadily increasing tempo. The guinea-pig has been throughout the main experimental animal.

At the beginning three of the laboratory staff came into contact, more or less closely, with infected guinea-pigs and other infected material. The work grew, and this number had increased to seven by May, 1938.

Two of the staff have themselves developed "Q" fever, one in June, 1937, and one in July, 1938.

## Case I.

On June 12, 1937, W.S., who had been assisting in "Q" fever investigations for four months, suffered the onset of an acute febrile illness. The fever lasted seven days. A provisional diagnosis of "Q" fever was made, and was confirmed by animal inoculation and serological tests. On June 16 a sample of blood taken on the fifth day of fever was injected into two guinea-pigs, one of which was immune. The test animal reacted typically with fever on the eighth day and remained febrile for nine days. The immune guinea-pig did not react. A second blood sample was taken on June 29, eleven days after the fall of temperature, and was tested at the Walter and Eliza Hall Institute for Research in Pathology and Medicine, Melbourne, for agglutinins to "Q" fever. Agglutination of a rickettsial emulsion was observed in a serum dilution of 1:8.

For a period of some months prior to May, 1937, guinea-pigs were the only laboratory animals used in the "Q" fever investigations. On May 5 and on several occasions during the following weeks a number of white mice were infected with "Q" fever virus. No parasites were noticed on them and no special precautions were taken to isolate the mice.

On June 4, eight days before the onset of his illness, W.S. killed and "passaged" a mouse inoculated thirteen days previously with blood from a "Q" fever patient. That this mouse was infected may reasonably be assumed, although actual proof was never established. During the preceding two months he had daily been handling infective guinea-pig material, but this was the only occasion on which he had handled infective mouse tissues.

There is a remote possibility that infection occurred during a visit made by W.S. to the abattoir towards the end of May.

In October, 1937, the laboratory stock of mice was found to be heavily infected with the tropical fowl-mite *Liponyssus bursa* (Berlese). In spite of active measures taken to eradicate the mites they persisted in varying numbers until the onset of cooler weather, early in April, 1938. Throughout this period a total of only twenty mice were experimentally infected with "Q" fever. The mice were sprayed with an insecticide before inoculation and were kept in the laboratory.

Consequent upon the inapparent infections sustained in the Walter and Eliza Hall Institute, Melbourne, blood samples were taken from five

members of the Brisbane staff on December 21, 1937. Agglutination tests were performed upon these sera at the Walter and Eliza Hall Institute. The only positive reaction was obtained with the serum of W.S. This indicated the presence of residual agglutinins from the infection acquired six months previously. There was no indication of the occurrence of latent infection among the other workers.

## Case II.

H.E.B. has assisted in the "Q" fever work since its commencement in September, 1935. He has taken part in the preparation of infective emulsions, the inoculation of guinea-pigs and other animals, the search for parasites on bandicoots and rats, and occasionally in the performance of agglutination tests with emulsions of "Q" Rickettsia.

His serum was among those which gave no "Q" agglutination in December, 1937.

On May 16, 1938, a series of mouse passages was begun.

While H.E.B. was holding a guinea-pig for inoculation on June 6, 1938, the syringe "exploded", and a heavily infected emulsion of mouse liver and spleen was sprayed onto the thumb of his left hand, some probably finding its way under the thumb nail. As soon as the inoculation, which lasted about ten seconds, had been completed, he placed his left hand in a bowl of disinfectant solution for a minute or two. There were no apparent cuts or abrasions on the thumb or fingers.

On June 28 he began to feel very cold in the back, and on July 5, that is, twenty-eight days after the syringe incident, the temperature rose and a typical attack of "Q" fever began. The fever lasted ten days, the temperature reaching a maximum of 40° C. (104° F.). The "Q" virus was obtained by guinea-pig inoculation from blood taken on July 8. An immune guinea-pig inoculated with the blood did not react in any way. Agglutination tests performed with sera taken on July 18 and August 9 gave positive results, and indicated a rise of titre from 1:10 to 1:100.

It should also be mentioned that H.E.B. carried out some "Q" fever agglutination tests on June 22 or 23, using an active rickettsial emulsion. It is possible that the infection was acquired then; but this is not considered likely, for there was no spilling of the emulsion, nor any known contact of the fingers with it.

## Possible Mode of Transmission.

In this review the outstanding circumstance is that both laboratory infections occurred during periods of mouse experimentation. This circumstance is the more striking because mice have not been much used. For a whole year, from May, 1936, till May 5, 1937, not one mouse was inoculated with "Q" fever; then a small series of mice were inoculated, and the first laboratory infection occurred in June, 1937. Mouse inoculation continued in a small way till February, 1938, and was then suspended for three months. It was resumed on May 16, 1938. The second laboratory infection occurred in the following July.

In contrast with the mouse work, guinea-pig experimentation has been carried out continuously and extensively. Several of the staff have handled infected guinea-pigs daily for months at a time, and performed frequent autopsies on them without themselves becoming infected. Lice (*Gliricola porcelli* and *Gyropus ovalis*) from infected guinea-pigs have been inoculated into other guinea-pigs without producing infection. It appears, therefore, that work with guinea-pigs provides comparatively little risk of accidental infection in contrast with work with



mice. This is in accordance with the known greater infectivity of mouse tissues.

The presence on our mice of *Liponyssus bursa*, a blood-sucking mite which attacks man, affords a possible explanation of the human infections. However, both infections occurred during the winter months when no mites could be seen. Also, during March, 1938, a large number of experiments were performed in an attempt to effect transmission of the virus to guinea-pigs through the agency of *Liponyssus bursa*. No conclusive evidence was obtained that transmission had been accomplished. In view of these facts transmission by mites in these two cases appears improbable.

The most likely mode of infection in both cases is considered to be the entrance of the Rickettsia through the skin, perhaps through a minute abrasion. In Case II there is a history of the spilling of highly infective emulsion on the thumb.

That transmission may be effected in this way receives some confirmation from a single guinea-pig experiment. The abdomen of a guinea-pig was shaved, without any obvious abrasion being made. The shaved area was then rubbed with a fragment of infected mouse spleen. The guinea-pig became infected with "Q" fever after an incubation period of fourteen days, and the strain of virus was put through two more guinea-pig passages. Another guinea-pig had the abdomen lightly scarified before the mouse spleen was rubbed on. It reacted with "Q" fever eight days afterwards.

#### Summary.

1. Two cases of laboratory infection with "Q" fever are described.
2. In each case the "Q" virus was found in the patient's blood by guinea-pig inoculation, and "Q" agglutinins were demonstrated in the serum during convalescence.
3. The infections were associated with mouse experimentation.
4. While the mite *Liponyssus bursa* (Berlese) was present at times on the mice and was therefore a potential vector, the infections are ascribed to direct contact with infective mouse tissues.

#### Acknowledgements.

We are indebted to Sir Raphael Cilento, Director-General of Health and Medical Services, Queensland, for permission to publish this note; and to the workers at the Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, for the agglutination tests.

#### RICKETTSIA BURNETI: THE CAUSE OF "Q" FEVER.

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It has become necessary to name definitely the organism causing "Q" fever, and the name *Rickettsia burneti* is proposed.

*Rickettsia burneti* is a rod-shaped, Gram-negative organism. It stains well by Giemsa's method, and stains blue by Castaneda's method. In the infected animal it is found only in intracytoplasmic accumulations. It is not capable of growth in standard bacteriological media. The usual size is about 1.0  $\mu$  long by 0.3  $\mu$  across, but forms up to 2.0  $\mu$  or 3.0  $\mu$  long are occasionally seen.

In size, shape, staining properties, intracellular habitat and failure to grow in ordinary culture, it resembles generally the known species of *Rickettsia*, and is therefore placed provisionally in this genus. An arthropod host of *Rickettsia burneti* is suspected, but not established.

"Q" fever being distinct from the other rickettsioses, a new specific name is required; "*burneti*" is chosen after Dr. F. M. Burnet, the discoverer of the organism.

*Rickettsia burneti* is more fully described and illustrated, and its aetiological relationship to "Q" fever discussed, in the following articles:

"Experimental Studies on the Virus of 'Q' Fever, by F. M. Burnet and Mavis Freeman, THE MEDICAL JOURNAL OF AUSTRALIA, August 21, 1937, page 299.

"The Rickettsia of 'Q' Fever: Further Experimental Studies", by F. M. Burnet and Mavis Freeman, THE MEDICAL JOURNAL OF AUSTRALIA, February 12, 1938, page 296.

"Tissue Culture of the Rickettsia of 'Q' Fever", by F. M. Burnet, THE AUSTRALIAN JOURNAL OF EXPERIMENTAL BIOLOGY AND MEDICAL SCIENCE, Volume XVI, September, 1938, page 219.

"'Q' Fever: Factors Affecting the Appearance of Rickettsiae in Mice", by F. M. Burnet and M. Freeman, THE MEDICAL JOURNAL OF AUSTRALIA, December 31, 1938, page 1114.

A general account of "Q" fever is given in the following publications:

"'Q' Fever, A New Fever Entity: Clinical Features, Diagnosis and Laboratory Investigation", by E. H. Derrick, THE MEDICAL JOURNAL OF AUSTRALIA, August 21, 1937, page 281.

The Annual Reports of the Health and Medical Services of the State of Queensland for the Year 1936-37, and the Year 1937-38.

A further article supporting the distinctness of "Q" fever from other rickettsioses is in preparation.

#### THEORIES OF SHOCK AND THEIR RELATION TO BURNS.

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#### Introduction.

In view of the recent developments in the treatment of shock, it is possible that a review of the theories of the mechanism of shock may be of assistance towards an understanding of the aims of these methods.

Shock is defined as a state of depression of all the reflex arcs, accompanied by circulatory depression. It is seen that two states are mentioned:

nervous and circulatory. These are probably interdependent. Though Wilson MacGregor and Stewart<sup>(1)</sup> describe five different stages of shock, shock will be classified under the headings of "immediate" and "delayed".

In 1863 Goltz<sup>(2)</sup> noted that a blow on the exposed mesentery of a frog produced reflex inhibition of the heart and reflex dilatation of the splanchnic arteries. This led physiologists to believe that in all cases of shock there was stasis of blood in the splanchnic area. In addition, Krogh<sup>(3)</sup> had shown that only a small percentage of capillaries in a resting muscle were filled with blood. Hence it was believed that in shock the animal "bled" into its muscles and splanchnic area.

#### The Humoral Theory of Shock.

Cannon<sup>(4)</sup> found that trauma to denervated areas produced shock if the vessels were intact. Lewis<sup>(5)</sup> has shown that a substance closely allied to histamine is liberated when skin is abraded. Histamine is present in all the cells of the body in varying degree; and Barsoum and Gaddum<sup>(6)</sup> found that there was an increase in the histamine content of the blood when trauma to the cutaneous areas produced shock.

The injection of histamine into the blood stream produced symptoms and signs somewhat similar to those found in shock; and it was felt that with new depressor substances being isolated frequently, one such substance might be discovered that would explain the irritating differences between true shock and "histamine" shock.

Up to the present it was generally thought that shock was due to depressor bodies liberated by damaged cells.

#### The Nervous Theory of Shock.

In recent times it has been noted by many surgeons and physiologists that there is no widespread vasodilatation and increase in volume of the gut in patients or animals suffering from shock. It was also found that, although a limb increased in volume during shock, the increase was insignificant if the limb had first been skinned. This suggested that the main increase was due to increase in volume of the subcutaneous tissues. Thus, the old view that a patient who was suffering from shock bled into the capillaries of his splanchnic area and his muscles is no longer generally held.

Slome and O'Shaughnessy<sup>(7)</sup> have repeated Cannon's original experiments. They found that, in the course of an experiment in which they perfused the hind limb of one animal from the neck vessels of another, if the perfused limb of the recipient animal *B*, was traumatized with the nerve supply to the limb intact, the animal *B* died with the typical signs and symptoms of shock. If the nerves were severed, the blood pressure of the animal *B* was practically unaffected, and in no case was any difference in blood pressure found in animal *A*. (See Figure I.)

They also found that nerves from traumatized areas carried a greater number of discharges than similar nerves from uninjured areas. This showed that centrifugal impulses were passing off in the nerves from the central nervous system.

Bell, Clark, and Cuthbertson<sup>(10)</sup> have carried out experiments similar to those of Slome and O'Shaughnessy. They found that when they perfused the hind limb of one dog *B* with the blood of another dog *A*, and then traumatized the perfused limb of the recipient *B*, the donor *A* died. If, however, the perfused limb was denervated, there was little effect to the donor when the perfused limb was traumatized. They also made comparative weighings, and came to the conclusion that the symptoms of the donor *A* were mainly due to a decrease in its blood volume brought about by a vasodilator reflex in the perfused and traumatized limb, which was dependent on an intact nerve supply. If we view the original experiment of Goltz in the light of this knowledge, it is probable that the splanchnic vasodilatation that he observed after a blow to the mesentery was a local reflex. Bell, Clark and Cuthbertson, therefore, believe that the death of the donor animal was due to great fluid loss brought about by a local vasodilator reflex, dependent on the intact nerve supply of the perfused limb.

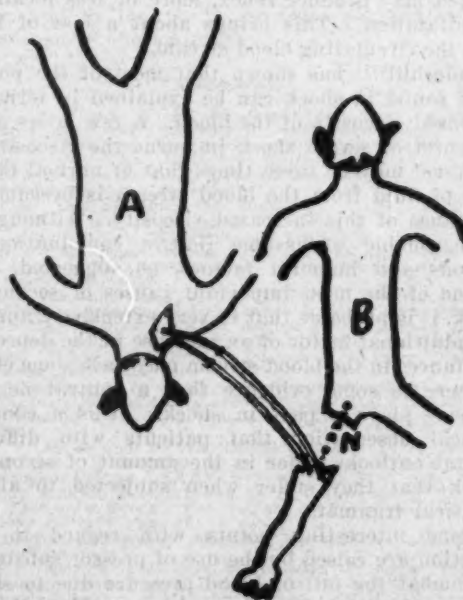


FIGURE I.

Diagrammatic representation of the crossed circulation experiment of Slome and O'Shaughnessy. Blood from the donor animal *A* supplies that limb of the recipient animal *B* which is to be traumatized. It was found that if the nerve *N* to the traumatized limb was allowed to remain intact, the recipient animal died of shock.

From these few experiments it can be seen that there is much in favour of a purely nervous origin of shock, as against a humoral origin.

### A Combined Nervous and Humoral Theory of Shock.

In view of recent experimental work it seems reasonable to assume that there are several factors in the causation of shock, and it is possible to combine the nervous and humoral theories of its origin.

Alam and Smirk<sup>(8)</sup> have shown that when the circulation to a human limb is completely occluded, and the subject exercises the limb, a reflex rise in blood pressure occurs. This rise in blood pressure occurs only if the circulation is occluded, and the blood pressure immediately drops if the occluding bands are taken off. This shows that metabolites produced by acting muscle can act on local nerve endings to produce general effects. Anrep and Saalfeld<sup>(9)</sup> have shown that very potent metabolites are present in the venous blood of contracting muscles.

In view of the fact that it has been shown that histamine and allied substances are liberated from cells by trauma, chemical or otherwise, it seems reasonable to assume that the first result of an injury is the local production of histamine, probably too small in amount to have any general effects. Since it has been shown that metabolites can have generalized effects via the nervous system by stimulating the nerve endings, the substances liberated by trauma may also act on the nerve endings. These in turn may produce reflex, more or less localized, vasodilatation. This brings about a loss of fluid from the circulating blood stream.

Underhill<sup>(11)</sup> has shown that most of the phenomena found in shock can be explained in terms of increased viscosity of the blood. A few hours after the onset of severe shock in burns the viscosity of the blood may be three times that of normal blood. Loss of fluid from the blood stream is presumably the cause of this increased viscosity. Although it is reasonable to assume that a combination of nervous and humoral factors, as suggested, may be one of the most important causes of secondary shock, it is probable that in very extensive traumata the additional factor of an increase in the depressor substances in the blood stream may have some effect.

There is some evidence that a central nervous element plays a part in shock. It is a common clinical observation that patients with different mental outlooks differ in the amount of secondary shock that they suffer when subjected to almost identical traumata.

Some interesting points with regard to this question are raised by the use of pressor substances to combat the fall of blood pressure due to shock. Two such substances have been tried: "Neosynephrin" and "Veritol". "Veritol" seems to act centrally, and causes no blanching when injected into the skin (Figure II). In an experiment on a perfused limb performed by Dr. Kellaway at the Walter and Eliza Hall Institute of Research in Pathology and Medicine, it had no effect on the limb volume. Since "Veritol", in a number of cases of shock, seems to be effective in prolonging life and raising the blood pressure (Figure III), it follows

that the state of shock may be combated centrally. In an unfinished series of cases in which the action of "Veritol" is being observed, only two out of ten consecutive patients have failed to respond to its administration with a rise of blood pressure of over twenty millimetres of mercury. "Neosynephrin", however, raises the blood pressure in shock by the mechanical action of decreasing the arterioles, and thus combats shock by peripheral action. It causes blanching when injected into the skin (Figure II).

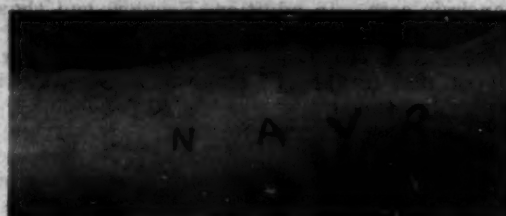


FIGURE II.

Showing the blanching of the skin produced by "Neosynephrine" (N), adrenaline (A), and the lack of local response to the intradermal injection of "Veritol" (V). The same volume of fluid was used in all cases, and R is a control injection of Ringer's solution.

### Application of the Theories to Burns.

In the case of burns there is a large area of coagulative trauma to the skin. The cause of primary shock is generally considered to be obvious. Many nerve endings are being stimulated. The first thing necessary, in an endeavour to prevent the onset of shock, is to alleviate pain generally by the use of morphine, and locally by the use of tannic

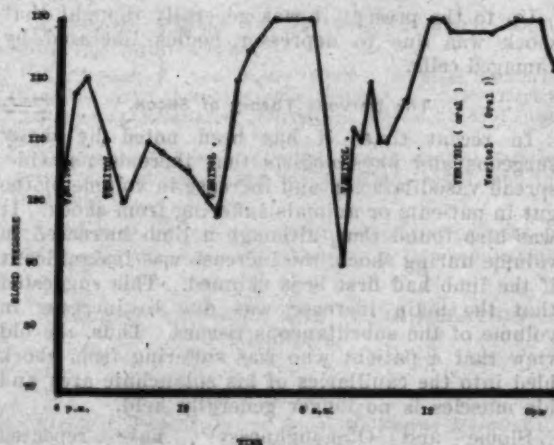


FIGURE III.

Graph showing the rise in blood pressure produced by the injection of "Veritol" in a patient suffering from shock.

acid or other agents. Tannic acid produces analgesia slowly, whereas gentian violet gives almost immediate relief from any pain.

Since the burning agent must have sterilized the more exposed portions of the burnt area, many people consider that it is unnecessary to cause further shock by the administration of an anaes-



thetic, and by "cleaning up" the area, with or without the use of a scrubbing brush. All that is necessary is that dead skin should be removed, so that free access may be given to whatever agents are to be applied to the burnt area.

There are many theories as to the cause of delayed shock in the case of burnt patients. Aldrich<sup>(12)</sup> considers that delayed shock is due to infection, usually with a  $\beta$  hæmolytic streptococcus. He therefore strongly advocates the use of gentian violet in the treatment of burns, as it is highly bactericidal to Gram-positive organisms. On the other hand, Mitchner<sup>(13)</sup> states that 80% of the deaths from burns occur in the first two days, presumably from shock and collapse, and he considers that only 20% of patients die from infection.

The view that the delayed shock in burns was due to toxæmia was, and still is, widely held. Underhill, Kapsinow and Fisk,<sup>(14)</sup> however, found a diminished rate of absorption from the burnt areas of inert dyes, and finally they injected five times the lethal dose of strychnine into the burnt area without affecting the animal used in the experiment. They maintain that the osmotic balance at the junction of the œdema fluid and normal tissue favours the excretion of substances into the œdema, rather than increased absorption from the burnt area.

In view of the fact that there is a great water loss from the body in burns, both by evaporation and exudation from the burnt area, and by transudation into the neighbourhood of the burn as œdema, it seems unnecessary to invoke hypothetical toxæmic substances to explain delayed shock. It is more than probable that shock delayed beyond a few days is due to infection.

If the cause of death in the first few days is due to either immediate shock or fluid loss, it seems logical to treat the patient generally with the administration of fluids, blood transfusions, morphine and the local application of an agent to alleviate pain, and to provide splinting and protection to the injured areas. When local treatment is being carried out, the fact that a large percentage of deaths in the later stages are due to infection should be taken into consideration. The question as to whether the substance used will stop absorption from the area need not be considered.

Tannic acid is a very poor antiseptic, and gives a thick, slowly forming eschar, which cracks easily and is not transparent. "Mercurochrome" was introduced (Turner<sup>(15)</sup>) because it was a better antiseptic and gave a transparent scab. Tannic acid and flavine, or tannic acid and silver nitrate, have been used, in order that the tanning qualities of tannic acid might be combined with better antiseptic qualities, and might form an eschar more quickly. (Wilson, MacGregor and Stewart<sup>(11)</sup>).

In America, a mixture of three dyes, as advocated by Aldrich,<sup>(12)</sup> has found favour; 1% brilliant green, 1% gentian violet and 1% neutral acriflavine are used. This is a highly antiseptic mixture, and

it gives an eschar that is thin and pliable. Moreover, in an unfinished series of cases in which I have been allowed to try it at the Royal Melbourne Hospital, it has stopped the patient's pain almost immediately, and has proved very satisfactory.

Whatever form of local treatment is employed, there comes a time when the eschar has been removed. It is then that animal oils may be used with effect. Puestow, Poncher and Hammatt,<sup>(16)</sup> in controlled experiments, found that the addition of vitamin A to the diet of animals decreased the healing time of burns by one half. The local application of cod-liver oil to burns shortened the healing time by 25%.

#### Summary.

1. Recent work on the humoral and nervous theories of the causation of shock is reviewed.
2. A combination of the humoral and nervous theories is suggested.
3. The application of these theories to the ætiology of shock in burns and the treatment of burns is discussed.

#### Acknowledgements.

My thanks are due to Dr. J. C. Eccles and Dr. G. Brown for help in the preparation of this paper, and to Dr. G. R. A. Syme for permission to use some of the material.

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## Reports of Cases.

### SUBACUTE COR PULMONALE: A REPORT OF TWO EXAMPLES OCCURRING IN CHRONIC ESSENTIAL HYPERTENSION AND ASTHMA WITH BRONCHITIS, RESPECTIVELY.

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Alfred Hospital, Sydney.)

COR PULMONALE, sometimes called the "emphysema heart", is a term introduced by American cardiologists to express a condition of strain upon the right auricle and ventricle. The evidence may be inconspicuous, namely, a so-called "compensated" physical and functional state of these chambers, of an efficiency sufficient to maintain a satisfactory return to the left side of the heart, in spite of an obstruction or a rise in pressure of the lesser circulation (Parkinson and Hoyle). The term has become more generally employed, however, to indicate a condition in which dilatation of the right side of the heart, of gradual or sudden development, is the principal change observed. According to the functional efficiency of the tricuspid valve, there may or may not be distension of the great systemic veins and their tributaries. There is usually some cyanosis, which at times may become extreme. In the chronic or static type dyspnoea at rest is uncommon, certainly as compared with that encountered in left-sided dilatation. Arrhythmia is unusual. Tachycardia is by no means the rule. Often pulmonary disease, concomitant left-sided heart disease *et cetera* complicate the picture and accentuate particular clinical features, such as dyspnoea, oedema or cough. Clinical differentiation is required from congenital heart disease and Osler-Vaquez disease (*polycythemia vera*). Erythrocytosis is the rule in long-standing cases. The acute type has been fully described by White, White and McGinn, Barnes and others, as following acute pulmonary embolism. The clinical features of this deadly post-operative or post-phlebotic complication are almost indistinguishable from those of acute coronary occlusion. Here the differential diagnosis must often rest upon minor but very important cardiographic characters. There is a sudden development of right-sided preponderance, with the appearances (in Lead III) characteristic of posterior ventricular infarction, except for deviation of the R-T segment. However, these abnormalities are not visible for long. Radiological changes are inconstant and unreliable.

Between these extremes of acute and chronic *cor pulmonale* a subacute syndrome may perhaps be recognized, in which a fairly rapid dilatation of the chambers of the right side of the heart occurs. The cause may be obscure or obvious. An exacerbation of a chronic bronchitis or bronchiectasis, undue physical exertion, a temporary failure of the left ventricle, a minor grade of pulmonary embolism, are all aetiological possibilities. Electrocardiography may or may not show an immediate change in axis deviation. The interpretation of the electrocardiograms obtained from the two patients to be described is obscured by the previous administration of digitalis and by the fact that the tracings were not secured immediately upon the patients' admission to hospital. These patients, however, resembled each other so much in the suddenness of their cardiac breakdown, in their degree of cyanosis and venous distention, in the absence of tachycardia and urgent dyspnoea, and in the rapidity of their recovery, as to lead to the suspicion that failure by a similar mechanism occurred in both.

The radiological observation suggested that a general cardiac enlargement was apparent, that the right chambers were chiefly affected. For this reason I have tentatively labelled the condition as subacute *cor*

*pulmonale*. No particular designation, so far as I am aware, distinguishes this condition from the static "emphysema heart" and the acute embarrassment of the right heart called acute *cor pulmonale*. The term "subacute *cor pulmonale*" is better than a cumbersome title, such as "fairly sudden dilatation of the right chambers of the heart". Patients exhibiting this syndrome are by no means uncommon, but it is preferable to restrict the description to those cases in which rheumatic and coronary disease plays a minor role, but in which obstruction of the lesser circulation constitutes the chief load upon the heart. Two examples follow, from a number I have seen. In Case I no previous pulmonary disease existed, while in Case II advanced pulmonary changes had occurred.

#### Case I.

M.W., a female, aged forty-two years, was admitted to the Royal Prince Alfred Hospital on May 12, 1938. The provisional diagnosis supplied was that of spontaneous pneumothorax. The history given was that she had been suffering from pain in the lower left axillary region for nine days, that she had some cough and that her fingers and lips had been observed to be blue for five days prior to her admission to hospital. The illness therefore began with what appeared to be a respiratory infection accompanied by a cough and general malaise. A sensation of tightness in the chest soon followed, with sharp pain to the left of the precordium. Discomfort in the chest, however, was not intensified by deep breathing or by coughing. The patient retired to bed and took a number of tablets containing aspirin, phenacetin and caffeine. No other drugs were employed. At no time during this illness had she suffered from breathlessness or palpitation. She stated that she was often nervous and irritable. No other symptoms referable to other systems were complained of. Her previous health had been reasonably satisfactory. There was no history of rheumatism or other infection which could leave any imprint on the heart muscle. Her family history was free of any suspicion of tuberculosis, heart disease or high blood pressure. She had two children, the birth of whom had been quite undisturbed by complications. She had had a flatulent dyspepsia for two years and stated that radiological tests had been carried out, which were said to have revealed a diseased gall-bladder. Some years before, she had had a course of thyroid therapy, which had reduced her weight considerably. No previous attacks of cyanosis had been observed. At the time of her admission to hospital her temperature was 36.7° C. (100° F.); her pulse rate was 100 and respiration rate 22 per minute. There was no sign of respiratory distress. The most striking feature was the pronounced cyanosis, most evident in lips, cheeks and finger tips. Her skin was warm and dry. She showed no evidence of suffering pain. She had a short cough without sputum or hæmoptysis. Her nutrition was quite satisfactory and she was mentally alert.

Examination of her cardio-vascular system revealed the following. Her chest moved asymmetrically. Arterial pulsation at the root of the neck was rather more pronounced than usual. There was distinct distention of the veins of the neck, but her neck was rather too well covered to allow of a proper estimation of their degree of engorgement. The apex beat was observed and felt to be rather more distinctly marked than one would expect in a person of her habitus. The impulse was located in the fifth intercostal space, 12.5 centimetres (five inches) from the mid-line. On percussion the right border of dullness extended at least 1.9 centimetres (three-quarters of an inch) beyond the right edge of the sternum; the upper border lay in the third interspace. The heart sounds were normal and of satisfactory quality in all areas; the second sound was accentuated at the mitral area; the pulmonary second sound exceeded the second aortic sound in intensity. No thickening of the radial or brachial arteries was palpable. The systolic brachial blood pressure was 150 millimetres of mercury and the diastolic pressure 110 millimetres of mercury. There was no oedema of the feet or enlargement of the liver.



Examination of the respiratory system showed equal and symmetrical expansion in all areas, with no alteration in the vocal fremitus or departure of the percussion note from its normal character over corresponding points of the chest. Breath sounds were vesicular and symmetrical. Some harsh scattered sonorous rhonchi were heard, and crepitant râles were evident at the bases of both lungs. No sputum was produced after the patient's admission to hospital. No abnormalities were found in the nervous system or alimentary system; while the urine was acid and free from any abnormal constituents. Serial skiagrams were made; these are commented upon separately.

Any possibility of sulphæmoglobinemia or methæmoglobinemia was excluded spectroscopically. A blood count revealed no abnormality. The blood urea content was 38 milligrammes per 100 cubic centimetres, but a urea concentration test showed a concentration to only 1.75% at the end of the fourth hour.

The blood did not react to the Wassermann and Kline tests. Observations were made upon the effect of changes in room temperature on the cyanosis, but no variation was observed. Inhalation of oxygen failed to improve the colour. After the patient had rested in bed for about a week, however, the colour began gradually to improve and the cough disappeared, together with the discomfort in the lower left thoracic region. The pulse rate varied between 80 and 100 beats per minute and averaged 85

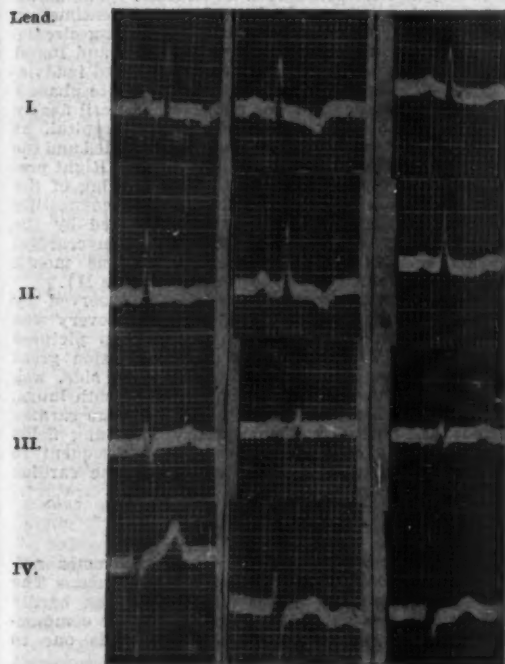


FIGURE 1.

Electrocardiograms obtained in Case I, showing progressive changes in the axis deviation and T waves in Leads I and II. In spite of clinical and radiological evidence of embarrassment, chiefly affecting the right side of the heart, no signs of right preponderance can be observed.

beats per minute. The temperature fell within twelve hours of the patient's admission to hospital and remained consistently normal afterwards. Subsequent estimations of blood pressure varied between 180 and 160 millimetres of mercury, systolic, and 110 and 90 millimetres of mercury, diastolic.

Electrocardiographic tracings were obtained (Figure 1). The first two are very similar and were taken while the

patient was in hospital; the third was recorded ten weeks later. The only abnormalities revealed were minor changes in axis deviation as indicated by the form of the T waves in Leads I and II. The most distinct degree of left axis deviation was apparent in the second tracing, at a time when the right-sided cardiac enlargement had almost disappeared. Digitalis may have contributed to

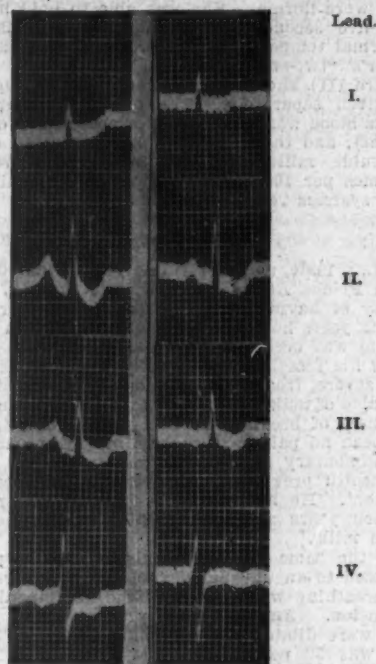


FIGURE 2.

Electrocardiograms obtained in Case II. No significant change in axis deviation took place at the onset of his cardiac failure nor during convalescence.

these changes. Reexamination after ten weeks, however, revealed a much more normal curve, although the T wave in Lead I was still biphasic. The curves are of the type normally accepted as indicative of "left ventricular strain" accompanied by a high degree of left-sided preponderance. Right ventricular "preponderance" and "strain" would be anticipated but are not always found in *cor pulmonale*. I have frequently seen evidence of left preponderance in the electrocardiogram of a patient with the clinical signs of "mitral stenosis" rather than "mitral regurgitation". It would appear that the electrocardiogram is often no more reliable than the stethoscope as an indication of the anatomical condition of the mitral valve.

The patient was not seen again until ten weeks after discharge from hospital. On examination at this time she looked particularly well. Her complexion was florid, with still a slight violaceous tinge in her cheeks. She had gained over 6.3 kilograms (one stone) in weight and stated that she had no respiratory distress and was able to do the household washing or climb stairs without embarrassment. There was no oedema of the ankles. The pulse rate when the patient was standing was 90 beats per minute. Increased movement of the carotid artery was still discernible. Her apex beat was in the fifth intercostal space, 11.3 centimetres (four and a half inches) from the mid-line. The heart sounds were sharp and clear in quality. The aortic second sound was accentuated and more intense than the pulmonary second sound. No murmurs or thrills were present. Careful examination in the right oblique position by means of the fluoroscopic



screen, before and during the swallowing of an opaque bolus, failed to convince me that undue left auricular dilatation existed. No semblance of a presystolic murmur was detectable in any posture, either before or after exercise. The average of several readings of blood pressure was 195 millimetres of mercury, systolic, and 105, diastolic. A cold pressor test produced no significant alteration in these figures. Arm to tongue and arm to lung circulation times were normal. She was able to hold her breath for thirty-five seconds; her vital capacity was 2.236 litres at normal temperature and pressure, and her response to Master's "two-step" test was satisfactory. The X ray (Figure III) and electrocardiographic findings (Figure I) are given separately. The oxygen desaturation of her venous blood was 6.9 volumes per centum of oxygen (upper normal), and the number of her red blood cells 5,300,000 per cubic millimetre; the haemoglobin value was 12 grammes per 100 cubic centimetres. Examination of the other systems revealed no abnormality.

#### Case II.

A.H., a male, aged forty-nine years, was admitted to the Royal Prince Alfred Hospital on August 5, 1938, with a history of having suffered from asthma for many years. For six years he had a continual cough with sputum. The sputum was occasionally streaked with blood. For three weeks his feet had been swollen and his asthma particularly severe, frequently culminating in vomiting. He was incapable of making the least exertion without experiencing shortness of breath. He had gained in weight and there had been no pain in the chest nor symptoms referable to the alimentary system, nervous system or renal system. His health previous to the onset of his cough had been excellent. He had worked as a coal miner at Bulli for thirteen years and subsequently to this had worked in cotton mills.

At the time of his admission to hospital he was cyanosed to an unusual degree and was perspiring freely. His breathing was distressed and accompanied by wheezy expiration. Anasarca was present. The veins in the neck were dilated and pulsating freely. The respiration rate was 30 per minute, the pulse rate 100 beats per minute, and the temperature 36.1° C. (97° F.). The thorax was almost motionless in the inspiratory position and the percussion note hyperresonant in all areas except at the left base behind. The breath sounds were harsh, expiration was prolonged, and there were fine crepitations and rhonchi of every description in all areas. He coughed frequently, but his sputum at the time was scanty.

Examination of his precordium revealed the absence of any superficial cardiac dullness. The left border of the heart appeared to be situated some 10.0 centimetres (four inches) to the left of the mid-line, but it was impossible to be definite as to the cardiac boundaries. The heart sounds were equally faint and unaccompanied by murmurs. The pulmonary second sound was of greater intensity than the aortic second sound. The blood pressure was stated to be 180 millimetres of mercury, systolic, and 110, diastolic. Chemical examination of his urine revealed no abnormality. His nervous system was normal. He was given sufficient morphine and atropine to keep him drowsy. "Coramine" and strychnine were given hypodermically.

Inhalations of oxygen were provided. Digitalis was not administered until three days after his admission to hospital, when he received one Guy's pill twice a day, together with two cubic centimetres of "Salyrgan" intramuscularly every third day, and two grammes of ammonium chloride by mouth three times a day. Four days after admission his condition had improved considerably. The respiration rate was now 27 per minute, pulse rate 85 per minute, and temperature 36.7° C. (98° F.). His urinary excretion rose from an average of 1.2 litres (40 ounces) per day to 2.4 litres (80 ounces) on the sixth day, finally becoming stabilized at approximately 1.5 litres (50 ounces) per day. Within five days oedema had almost disappeared, and ascites could not be found. Serial teloradiograms were obtained (Figure IV).

The examination of the blood showed no retention of nitrogenous factors. The blood count was normal or even slightly subnormal as regards haemoglobin and red cell concentration.

Pus cells were profuse in the sputum, which also contained streptococci and *Micrococcus catarrhalis*, but no tubercle bacilli. There was no reaction to the Wassermann and Kline tests.

His improvement continued, but was punctuated by the occurrence of wheezing attacks, especially on cold nights. He was finally allowed out of bed about five weeks after admission to hospital. He was still complaining of occasional shortness of breath at night, but showed no evidence of cyanosis, tachycardia or oedema. The daily quantity of sputum averaged about 90 cubic centimetres (three ounces); the arm-to-tongue and arm-to-lung circulation times were estimated during convalescence and found to be within the normal limits. (It was considered inadvisable to inject ether intravenously during the acute phase.)

The first electrocardiogram was not obtained until nearly two weeks after the patient's admission to hospital, at which time the acute symptoms had almost subsided and the patient was well under the influence of digitalis. Right preponderance was not present, and while no slurring of the QRS complexes was present, the form of the connecting segments and of the T waves was too obscured by the effects of the drug to give information as to myocardial degeneration. A further electrocardiogram one month later showed much the same appearances (Figure II).

The progress of the patient was closely observed by serial radiography. A striking radiological recovery was observed in the interval between the first two pictures obtained (Figure IV). Four days after admission great dilatation of the heart, especially of the right side, was present, with well-marked venous congestion of both lungs, particularly at the bases, and two weeks later the cardiac enlargement had virtually disappeared. The lung fields were also distinctly clearer. Appearances subsequent to these dates were almost identical as far as the cardiac silhouette was concerned.

#### Discussion.

Acute and chronic *cor pulmonale* are syndromes sufficiently distinct to deserve clinical independence. The identity and frequency of a subacute variety can hardly be established on a basis of two patients, but the commonplace character of the basic disturbances leads one to

TABLE I.  
Showing Cardiac Diameters at Different Dates.

	Date.	Longitudinal Diameter in Centimetres.	Median Right Diameter in Centimetres.	Median Left Diameter in Centimetres.	Total Transverse Diameter of the Heart in Centimetres.	Cardio-Thoracic Ratio.
Case I .. ..	May 14, 1938 ..	16.0	4.7	9.7	14.4	1.7
	May 17, 1938 ..	14.2	3.8	9.2	13.0	1.0
	May 20, 1938 ..	14.2	3.6	8.2	12.0	2.1
	May 31, 1938 ..	14.0	3.6	8.4	12.0	2.1
Case II .. ..	August 10, 1938 ..	15.0	7.3	8.4	15.7	2.0
	August 25, 1938 ..	13.3	5.6	7.5	13.1	2.3

suspect that, if sought for, it should be easy to decide whether a subacute type deserves separate recognition. Strictly speaking, in any well-developed case of mitral stenosis the cardiac silhouette is that of chronic *cor pulmonale* with additional selective overstretching of the left auricle. Obstruction to the lesser circulation by emphysema, pulmonary fibrosis, with or without bronchiectasis, pulmonary arteritis (Ayerza's syndrome), mitral regurgitation and so forth, can create a change in the cardiac contour of this more "static" variety. In the "acute" form a hypertensive crisis with sudden failure of output from the left side of the heart, severe asthma, pulmonary infarction, sudden massive collapse, the impaction of a large foreign body in a bronchus, tracheal obstruction—all call for rapid readjustment, especially of the output of the right side of the heart and of the tension in the pulmonary circuit. If the myocardium itself is healthy, readjustment can occur fairly rapidly, providing the initial crisis is passed.

In the first of the present cases, it may be suggested, the train of events was as follows. The patient suffers from a variable grade of arterial hypertension, with some renal ischaemia, which has probably been in existence for a few years; the accessible vessels are, however, little hypertrophied. Her friends have told us that she is normally the possessor of a "high colour", with even a slightly bluish tinge. These were the basic conditions. She contracted a coryzal infection. Bronchitis followed. She continued to perform her usual physical tasks. The rise in pressure of the lesser circulation from continued coughing may have been fortified (but of this we have no certain evidence) by a temporary relative failure of the left side of the heart. A small pulmonary infarct, or even a small cardiac infarct was a possibility; but her atypical pain and the electrocardiograms and the preservation of a normal blood pressure and heart rate are strong points against such hypotheses.

At the time of her admission to hospital her most striking characteristic was the dark cyanosis, coupled with a normal heart rate, a slight fall in blood pressure only, and the absence of respiratory distress during rest. This combination is one of the most arresting features of the syndrome, and is probably due to slow respiratory exchange in the congested and perhaps thickened pulmonary capillaries, together with a rise of the threshold for reflex dyspnoea from pulmonary over-distension. The left ventricle did not appear to be clinically enlarged. There was a disproportionate increase of dullness to the right of the sternum. The pulmonary second sound equalled the aortic second sound in intensity, notwithstanding the raised systemic tension. The cardiac silhouette was typical of right-sided dilatation, and the electrocardiogram suggested a well-marked left preponderance, which, however, underwent a change during the period of her illness. Examination of the lungs showed signs of basal oedema.

Subsequent events proved that the condition was a transitory one, and reexamination two months later showed no signs of a lesion of the right side of the heart.

In Case II the patient rapidly developed congestive failure of the type under discussion, after a severe paroxysm of asthma. He suffered from advanced emphysema and bronchitis. Systemic hypertension may also have contributed. His first teleradiogram showed a characteristic cardiac silhouette; his pulse rate was unduly elevated, and recovery after rest was prompt, even before digitalis had time to exert its full effects. Seen again nine weeks after the onset of his illness, he was walking about in fair comfort, although still wheezing towards evening; but was free from tachycardia, cyanosis and any evidence of congestive failure. Sources of strain of the right side of the heart of this type produce *cor pulmonale* more frequently than factors primarily loading the left ventricle. The presence of the former conditions tend to obscure the cardiac syndrome. The condition of the patient in Case II at the time of his admission to hospital was grave and alarming; but recognition of the short history, the cyanosis, absence of great tachycardia, and the pre-existing pulmonary disease brightened the prognosis. It

is from this standpoint that isolation of *cor pulmonale* as an entity is worth while. The additional dyspnoea and oedema in this case as compared with Case I were probably related to the degree of chronic pulmonary damage and lower cardiac reserve induced thereby. The depth of cyanosis was approximately equivalent.

A favourable prognosis is usually justified in the absence of established coronary artery disease or endocarditis, and in spite of the alarming degree of cyanosis. Treatment depends upon the underlying cause. Oxygen is usually of little value; but rest, with venesection if the systolic venous pressure is raised, is often sufficient, as in the cases reported here. The value of digitalis in moderate doses is difficult to assess in what is often a self-limited state; but the use of this drug at least has some theoretical justification and is usually advised.

#### Summary.

A syndrome is noted in which a sudden development of cardiac insufficiency is associated with signs of embarrassment of the right cardiac chambers. In one instance chronic lung disease existed beforehand, in the other there were no clinical features of previous pulmonary disorder. In each case the systemic blood pressure was above normal. In both cases cyanosis, engorgement of the superficial and pulmonary veins, accentuated pulmonary second sound and some dyspnoea were observed, together with radiological signs of dilatation of the right cavities of the heart, but without severe tachycardia, arrhythmia, gallop rhythm or *pulsus alternans*. Unfortunately electrocardiography and estimation of circulation time in the pulmonary circuit were not performed during the most acute phase. In each instance recovery was surprisingly rapid. It is suggested that such patients belong to a group which may deserve the designation of "subacute *cor pulmonale*".

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#### PATHOLOGICAL REPORTS FROM THE CHILDREN'S HOSPITAL, MELBOURNE.

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#### XVI. RENAL TUBERCULOSIS IN CHILDHOOD.

TUBERCULOSIS of the kidney, clinically manifest, and of morbid anatomy such as that exemplified in Figure XXVI, occurs uncommonly in childhood. The illustration is a reproduction of a photograph of a museum specimen, provided by the operation of nephrectomy performed at the Children's Hospital, Melbourne, by Major-General R. M. Downes on August 30, 1932, for a girl aged eleven years. She had been troubled with frequency of micturition and dysuria for six months prior to her first appearance at the Children's Hospital on June 29, 1932. Two days later tubercle bacilli were demonstrated in the urine. The story of the painstaking investigations, as recorded in the admirable clinical diary maintained by Dr. E. M. Tymms, which



eventually determined as far as was humanly possible that the right kidney was tuberculous and the left apparently unaffected, is a long one and not essential to my present purpose. It is a matter for regret, however, that the average length which I have endeavoured to observe in these communications does not permit the inclusion of Dr. Tymms's notes; for they furnish a model clinical history. They record that there was much vesical ulceration around the orifice of the right ureter, revealed by cystoscopy, and that after the operation of nephrectomy a discharging sinus in the loin persisted for twelve months. This not uncommon sequela of nephrectomy for tuberculosis of the kidney was no doubt referable to tuberculous lesions in the remnant of the ureter.

The specimen illustrated shows the tuberculous process in the kidney advanced to the stage of destruction and cavitation—renal phthisis—but it must not be assumed that its selection for discussion implies that it represents a common lesion in childhood. On the contrary, specimens exhibiting renal tuberculosis of this type and extent have been few and far between in my experience in the pathological department of the Children's Hospital; but the infrequent occurrence of major lesions is no guide to the incidence of tuberculous infection of the kidney.

Much evidence has accumulated to show that the incidence of tuberculous infection of the kidney, as distinguished from clinically evident tuberculosis, has been under-estimated in the past, and there can be no doubt that in association with other active hæmatogenous lesions, such as those of bones and joints, minor tuberculous renal lesions are not very uncommon. Such small foci might persist for a long time before attaining the dimensions at which they declare themselves clinically, and in the interval there are no urinary symptoms whatever; pyuria is very slight, and often intermittent, so that it is likely to be overlooked unless careful and repeated examination of the urine is made. Such minor renal lesions of hæmatogenous origin do not necessarily advance, and the exhaustive studies of Medlar have adduced strong evidence that they frequently heal.

At the Hospital for Sick Children, Toronto, R. I. Harris<sup>22</sup> found tubercle bacilli in the urine of nine among 67 children affected with bone and joint tuberculosis. These children had no symptoms referable to the kidney or urinary tract, the only clinical sign that all was not right in the urinary system being a mild degree of pyuria, recognisable only by microscopic examination. The existing state of affairs was disclosed by the routine injection of urine every two months into guinea-pigs, and prior to the institution of these measures tubercle bacilli had been detected in the urine of only one among 393 patients. The same observer, R. I. Harris, by means of routine guinea-pig inoculations, demonstrated the presence of tubercle bacilli in the urine of 37% of adult subjects of osseous tuberculosis.

During the past nine months, with the cooperation of Dr. Hughes, resident pathologist at the Austin Hospital, I have investigated specimens of urine from 38 adult patients affected with tuberculosis of bone, and have recovered tubercle bacilli in culture from 17 of them. I have also obtained cultures of *Bacillus tuberculosis* from the urine of 16 other patients, none of whom was affected with bony tuberculosis, and from the same source in three children at the Children's Hospital orthopaedic section, Frankston, inmates of that institution by reason of tuberculosis of the hip or spine.

In the cultivation of *Bacillus tuberculosis* from the 36 sources indicated I have relied on direct cultivation, without the use of guinea-pigs, and as the result of experience in this group of urinary specimens, combined with that in a diversity of samples of tuberculous material from all sources, I feel that I can fully endorse the statements of those workers who maintain that the technique of culture of *Bacillus tuberculosis* has now been advanced to a stage at which it equals in sensitivity the older, slower and generally more cumbersome method of animal inoculation. Of this more anon, and in another place, as the work is being conducted with the assistance of a grant from the National Health and Medical Research Council and a report on it will be published in due course.

The occurrence of symptomless tuberculous bacilluria has been recognized for many years, and has given rise to the conception of "elimination" or "excretory" bacilluria, terms which imply that tubercle bacilli are excreted by healthy kidneys which suffer no damage in the process. Medlar and Sasano,<sup>23</sup> in presenting experimental work which does much to explode this hypothesis, quote a long list of authorities, included among whom is Calmette, who have upheld it. The idea of "excretory" bacilluria is no longer tenable.

Medlar and Sasano,<sup>23</sup> in a carefully planned series of experiments, could find no evidence to support the view that tubercle bacilli might be excreted by a normal kidney. They proceeded by collecting the entire urinary output of tuberculous guinea-pigs and rabbits, in twenty-four-hour quantities or greater, over a period of several days or weeks. The sediments from the samples collected were examined for pus and tubercle bacilli and inoculated into normal guinea-pigs. The kidneys from all animals in which the urine had been studied in this manner were subjected to searching examination in serial microscopic sections regardless of the gross appearance of the organs, with the result that in every animal in which tuberculous bacilluria had been demonstrated the kidneys were found to bear histological evidence of tuberculous infection. Medlar and Sasano were insistent that serial sections were a necessity if the danger of overlooking tuberculous lesions in the kidney were to be avoided.

Medlar<sup>23</sup> also showed that of 30 patients dying of pulmonary tuberculosis, 22 had renal lesions, although none had displayed urinary symptoms before death. This particular research was designed and executed on an heroic scale, involving as it did the preparation and examination of 100,000 serial microscopic sections of the kidneys to be investigated. The lesions were all small, often microscopic in size; in every instance they were bilateral, and—a very important observation—many showed indubitable evidence of healing.

Another worker in the same field is David Band,<sup>24</sup> whose report was published in 1935. Band investigated 174 cases of extra-urinary tuberculosis for tuberculous bacilluria. Symptoms were absent from all; cystoscopic and pyelographic evidence of urinary tuberculosis was also lacking. From 25, or 14.4%, of the specimens examined tubercle bacilli were isolated by animal inoculation. It is to be noted that pus cells were present in excess in every specimen of urine yielding a positive finding. The kidneys of five patients in whom tuberculous bacilluria had been present were secured at necropsy. No macroscopic evidence of tuberculous infection was found, but on microscopic examination of serial sections—no less than 1,500 to 2,000 from each half kidney—bilateral tuberculous renal lesions were found in each of the five patients.

The industry and tenacity of such tireless investigators as Medlar and Band compel admiration, as their results demand the rejection of the theory of "excretory" tuberculous bacilluria.

Renal tuberculosis must be regarded as of hæmatogenous origin and as a process which is apt to arise in individuals who have an active tuberculous focus elsewhere. In patients with active focal tuberculous lesions, circulatory dispersion of tubercle bacilli takes place very frequently. Clinical evidence of this is provided by the large number of instances in which bone and joint and genito-urinary tuberculosis develops in persons who have never before shown any tuberculous manifestations. It must be allowed that in such cases the infection of first clinical importance comes to the affected place by the blood stream in a person who has had an unsuspected focus somewhere. Further, when apparently primary kidney or bone tuberculosis does arise, it is not likely that the bacilli which have induced those lesions have been the only detachment to traverse the bodily tissues by way of the blood stream. It is also highly probable that an actual spreading of bacilli by the blood in tuberculous infection in general is much more frequent than the number of cases which become clinically appreciable indicates. As Krause has stated, there is no more certain fact in tuberculosis than that the number of infections of any structure is many times the number of symptomatic foci, or that clinical



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ILLUSTRATIONS TO THE ARTICLE BY DR. KEMPSON MADDOX.

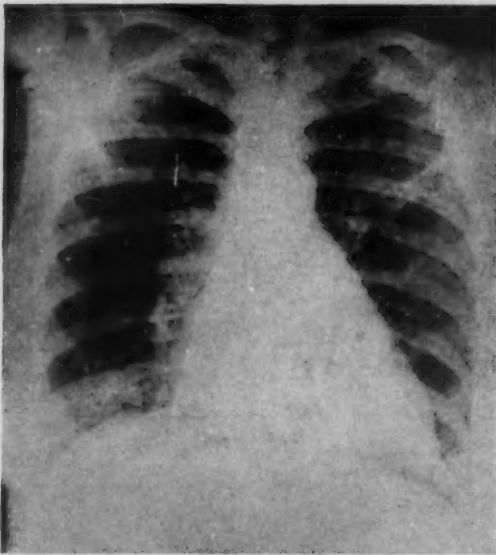


FIGURE IIIA.

Teleradiogram showing shrinkage in the cardiac shadow within one week of sudden onset of embarrassment of the right side of the heart. Within this time "mitralization" and pulmonary congestion had almost completely disappeared. (Case I.)

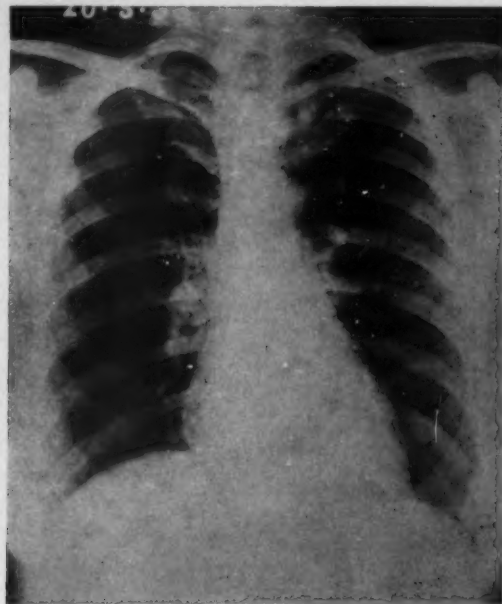


FIGURE IIIB.

Teleradiogram showing shrinkage in the cardiac shadow within one week of sudden onset of embarrassment of the right side of the heart. Within this time "mitralization" and pulmonary congestion had almost completely disappeared. (Case I.)



FIGURE IVA.

Teleradiogram showing the appearances soon after admission to hospital. (Case II.)



FIGURE IVB.

Teleradiogram taken two weeks later, showing a striking change in the cardiac silhouette, with reduction of cardiac area to normal contour. The outline of the heart shadow observed at this time has been superimposed on that in Figure IVA in order to show that the dilatation was chiefly right-sided. (Case II.)



ILLUSTRATION TO THE ARTICLE BY DR. REGINALD WEBSTER.

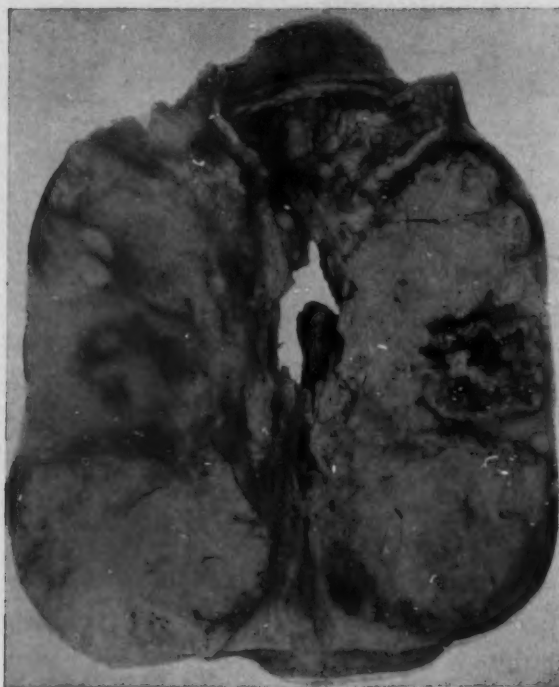


FIGURE XXVI.

ILLUSTRATION TO THE ARTICLE BY  
DR. L. N. GOLLAN.



FIGURE I.

ILLUSTRATION TO THE ARTICLE BY  
DR. E. H. V. LLOYD-WILLIAMS.



FIGURE I.







disease of an organ develops once for every five, ten or fifty times that bacilli lodge there.

If the view is accepted that more or less frequent "seeding" of bacilli from an active tuberculous focus occurs, with concomitant low-grade, possibly intermittent and evanescent bacillæmia, it is natural to speculate on the possibility of providing laboratory proof of the presence of tuberculous bacillæmia.

The literature relating to laboratory demonstration of tuberculous bacillæmia is very extensive, and has been reviewed in a masterly manner by G. S. Wilson<sup>(6)</sup> in a special report of the Medical Research Council of Great Britain.

Conspicuous and startling among the results of a large number of workers are those published by Lowenstein. This worker, with whose name is associated an excellent medium for the cultivation of *Bacillus tuberculosis* and a technique which is undoubtedly capable of recovering the tubercle bacillus by blood culture, has claimed results in this particular which are little short of astounding. Lowenstein claims to have recovered tubercle bacilli by culture from the blood during life in 40% of subjects of pulmonary tuberculosis in all stages and 100% of patients in the "aputum-positive" pyrexial stage of phthisis. He further states that in miliary, meningeal or intestinal tuberculosis the bacilli are recoverable from the blood in 80% to 100% of cases and in 40% to 60% of those in which the tuberculous manifestations are laryngeal, renal, dermal or "surgical".

Any degree of credibility allowed to the foregoing results is considerably diminished by Lowenstein's further claims, which embrace the demonstration of tuberculous bacillæmia by blood culture in 67% of subjects of articular rheumatism and polyarthritis and 50% of patients afflicted with a variety of nervous diseases, such as chorea, multiple sclerosis, schizophrenia and retrobulbar neuritis.

Nothing comparable with these results has been obtained by any of the numerous workers since Lowenstein. G. S. Wilson concludes a restrained but trenchant criticism of Lowenstein's findings with the statement that the criteria used in the identification of the tubercle bacillus are quite insufficient to justify the far-reaching conclusions, both of fact and of theory, which Lowenstein has drawn, and that the unqualified reception of such conclusions by scientific workers cannot be seriously entertained.

Typical of the results attending blood culture for the recovery of *Bacillus tuberculosis* during life, obtained by workers who have followed Lowenstein, are those of Schwabacher.<sup>(6)</sup> This investigator examined, by animal inoculation during life, the blood of 22 patients suffering from severe pulmonary and non-pulmonary tuberculosis, with uniformly negative findings. She applied the cultural method to the blood of 281 patients suffering from pulmonary or other manifestation of tuberculosis and recovered three strains of *Bacillus tuberculosis*.

Although the cultural method is capable of revealing the presence of tubercle bacilli in the blood of tuberculous patients and animals, the intensity of the bacillæmia that must be present to enable the bacilli to be recovered in culture is not known.

In summarizing the position, G. S. Wilson states that bacillæmia of a degree which would enable its detection by available laboratory methods is, except as a transitory phenomenon, rarely present in tuberculosis until the disease has assumed an acute phase accompanied by extensive lesions or by actual generalization. In the early stages of pulmonary and non-pulmonary tuberculosis demonstrable bacillæmia is rare, but it may be present in perhaps 5% to 10% of cases of advanced and progressive pulmonary tuberculosis, and in 30% to 40% of cases of miliary and meningeal tuberculosis.

It is notable that in the *post mortem* heart blood of patients who have died of tuberculosis, cultural examination may be expected to disclose the presence of tubercle bacilli in about 50% of the cases.

Wilson also finds that there is no reason to believe that the isolation of the tubercle bacillus from the blood is likely to be of any practical value in the early diagnosis of tuberculosis.

In a subject such as that of tuberculous infection it is difficult to restrict the discussion to any one aspect and avoid being led far afield in the general question. Thus I have wandered a long way from the original theme of renal tuberculosis in childhood, the principal points in connexion with which might be reduced to the following statement.

Clinically appreciable tuberculosis of the kidney is uncommon in childhood; but tuberculous infection, inducing minor and symptomless lesions, occurs more frequently than has been realized in the past. This type of tuberculous infection is particularly apt to occur in association with tuberculosis of bones and joints. Though the minor lesions provoke no symptoms, they are not without signs; for careful and repeated examination of the urine will disclose microscopic pyuria, with or without red blood cells. Fortunately many of these minimal lesions heal, and only a minority progress to the ulcerocavernous stage illustrated in Figure XXVI.

For myself, I shall endeavour to forget that such a term as excretory bacilluria, elimination bacilluria, filtration bacilluria or other variant designed to suggest the passage of tubercle bacilli through healthy kidneys was ever devised. The theory can no longer withstand the weight of evidence against it.

The girl from whom Major-General Downes removed the kidney which has provided me with a text is still alive, six years after the operation. She is troubled with frequent micturition and dysuria and leads the restricted life of an invalid. In a specimen of urine obtained a few weeks ago I was unable to demonstrate tubercle bacilli microscopically; but culture by the sulphuric acid technique and the medium of Petragiani resulted in a positive finding.

#### References.

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- <sup>(3)</sup> E. M. Medlar: "Cases of Renal Infection in Pulmonary Tuberculosis: Evidence of Healed Tuberculous Lesions", *The American Journal of Pathology*, Number 5, September, 1926, page 421.
- <sup>(4)</sup> David Band: "Renal Tuberculosis", *The Edinburgh Medical Journal*, Volume XLII, Number 3, 1935, page 162.
- <sup>(5)</sup> G. S. Wilson: "Tuberculous Bacillæmia", Medical Research Council of the Privy Council, Special Report Series, No. 132.
- <sup>(6)</sup> Herta Schwabacher: "The Cultivation of Tubercle Bacilli from the Blood", *idem*, Appendix A.

#### A CASE OF HYPEROSTOSIS FRONTALIS INTERNA.

By L. N. GOLLAN, M.B., B.S.,

Senior Resident Medical Officer, Launceston Public Hospital, Launceston.

*Hyperostosis frontalis interna*, an unusual and interesting condition, was first described by Morel in 1930. The following case is of special interest since a definite train of symptoms led to the diagnosis; the condition was not discovered by accident or routine X-ray examination as is usually the case.

#### Clinical History.

The patient, a married woman, aged forty-eight years, first presented herself at the out-patient department in September, 1936, complaining of slight difficulty with swallowing and with inspiration of six years' duration. On examination of the throat the vocal cords were found to be normal.

Five months later she was seen again. On this occasion she complained of loss of weight, night sweats and a cough. Examination of the chest revealed dulness of percussion note, with diminished vocal resonance in the right axilla. An X ray examination of the chest revealed no abnormality.

She attended next in April, 1938, complaining of loss of voice, especially when her head was turned to the left. She experienced occasional difficulty in deglutition. When she was more closely questioned about her history, she stated that she had gradually been losing her voice for the previous six years, the loss first being noticed when she attempted to call out. At the time of examination she had difficulty in speaking at all loudly. She felt nervy and irritable, suffered from vague aches and pains, especially a heavy feeling in the precordial region, and had frequent headaches; mainly occipital. The headaches occurred when she was at rest, and the patient felt much better up and about than when resting. For the past five years she had noticed spots and flashes of light before the eyes and a constant tinnitus in the right ear; these symptoms had become no worse over that period. For the same length of time her memory had gradually become impaired, and she was very absent-minded. This mental change was confirmed by her relatives.

She had lost no weight, but slept very badly during the night. She was able to sleep fairly well during the day-light hours. She had slight frequency of micturition, but no scalding. She passed urine seven times during the day and once or twice at night.

Nothing of importance was learned from the obstetrical and family history. From the patient's own history nothing of note was learned, except that she had fallen from a horse when a child, the attending physician diagnosing mild concussion and shock.

It will be noted, then, that the main symptoms complained of were loss of voice, loss of memory, occipital headaches, spots and flashes of light before the eyes, insomnia, tinnitus, irritability and vague aches and pains. On examination the patient appeared a thin, unhappy-looking middle-aged woman. On physical examination no abnormality was found, except some slight generalized dulling of sensation to pin-point.

The patient was referred to the ear, nose and throat clinic; and Dr. McDonald reported complete paralysis of the right vocal cord. She was next referred to the eye clinic, and Dr. Carter found vision to be  $\frac{6}{6}$ , and the fundi and visual fields to be within normal limits.

Several days later the patient was examined by means of the fluoroscopic screen, to exclude any source of pressure on the right recurrent laryngeal nerve. With a thick barium swallow no abnormality was detected in the oesophagus, mediastinum, heart or great vessels.

The Kline test elicited no reaction. An X ray examination of the skull was then made; this revealed a generalized increase in thickness of the skull, with local hyperostosis in the frontal bone (see Figure 1).

As the patient lived in the country, she was admitted to hospital in May, 1938. On May 27 the calcium content of the blood serum was 10.4 milligrammes per 100 cubic centimetres of blood; the phosphate content of the serum was 3.8 milligrammes per 100 cubic centimetres of blood.

Urinary investigation revealed no abnormality. The urea content of the blood was 30 milligrammes per 100 cubic centimetres.

On May 31 lumbar puncture was performed and clear fluid under a pressure of 11.5 centimetres of water was obtained. The chloride content was 740 milligrammes per 100 cubic centimetres of fluid; the protein content was slightly increased; and two cells per cubic millimetre were found.

On June 9, 1938, the calcium content of the serum was 10.2 milligrammes per 100 cubic centimetres of blood; the phosphate content of the serum was 3.6 milligrammes per 100 cubic centimetres of blood.

Stereoscopic films of the skull were made. These showed that the localized thickening appeared to be confined to the inner tables of the frontal bone and gave the appearance of flowing downwards and outwards over the frontal bone from the vertex on both sides equally. Films of the long bones were taken, and revealed no abnormality.

The fundi and vocal cords were again examined and found to be as before. A test of the acid-base equilibrium of the blood could not be attempted, as facilities were lacking. The patient was given 10 units of "Parathormone" and a diet relatively poor in calcium was insti-

tuted. She was discharged from hospital and given a bromide mixture to take.

She next attended the out-patient department on June 22, when she stated that she was feeling much better, and was able to lie in bed without discomfort. Her headache had considerably decreased and she was feeling less depressed and irritable. On this occasion the calcium and phosphate contents of the blood were respectively 10.1 milligrammes and 4.8 milligrammes per 100 cubic centimetres, and on July 16, 11.3 milligrammes and 4.2 milligrammes per 100 cubic centimetres of blood. On this last occasion the patient said she felt fairly well, and was still having a great deal of relief from her symptoms.

#### Discussion.

As I have mentioned previously, the interesting fact about this case is the complaint of definite symptoms which led to the diagnosis. These included polyphagia, polyuria, disturbances of sleep, bizarre mental symptoms, and symptoms related to the seventh and eighth nerves. (See Moore's article in *Surgery, Gynecology and Obstetrics*, September, 1935.)

This case belongs to the sessile type of hyperostosis as described by Moore. The inner table of the bone only is involved, the outline being smooth and the process limited entirely to the frontal bone, with no apparent destruction of bone or decalcification.

So much for the local condition. The majority of symptoms are explained by it; but the paralysis of the right cord gives some cause for thought. It cannot be placed among the secondary symptoms which occur late in the condition on account of pressure upon and atrophy of the frontal lobes; the most likely cause is some direct pressure upon the right recurrent laryngeal nerve. However, as has been shown by the X ray films, there was no such pressure in the thorax; so the next most likely cause is a right parathyroid tumour. Clinical examination gave no hint of this; and there was no hypercalcaemia or increase in blood phosphate content as would be expected with a tumour. Therefore its cause appears to be rather obscure.

The aetiology of *hyperostosis frontalis interna* is enshrouded in darkness; but Morel, in his original article, suggests that there may be a mechanism in the floor of the third ventricle which is peculiar to the female and controls calcium metabolism in this sex.

Nevertheless, although the aetiology is vague, here is a type of patient surely not uncommon in larger medical out-patient clinics, often and easily regarded as something of a nuisance; but when time is taken for a proper consideration of the history and for the appropriate investigations arising from it, the lesion is found to be readily classified as a syndrome which is of great clinical interest.

#### Acknowledgements.

My thanks are due to Dr. J. C. Fulton, the medical superintendent of the Launceston Public Hospital, for his permission to publish this case, and to Dr. W. P. Holman, for his enthusiasm and help in investigating the case and for his assistance in the preparation of this paper.

#### A CASE OF A TOOTH LOST IN THE MAXILLARY ANTRUM.

By E. H. V. LLOYD-WILLIAMS,  
Sydney.

S.W., a male, aged forty-five years, consulted me recently, complaining of extreme lassitude, loss of weight, and a foul-smelling nasal discharge. His sinuses had been examined by X rays eight years previously, and a diagnosis of chronic inflammation of both maxillary antra given. He had been treated by intranasal antrostomy and lavage on four occasions and had finally been told that nothing more could be done for him.



The patient consulted me to see if short-wave therapy would give him any relief. I insisted on taking another X ray picture of his sinuses myself, on account of the length of time that had elapsed since his previous examination.

I discovered the shadow of a tooth root, high up in the right antrum. On taking a lateral view, I was surprised to see the root near the roof of the antrum, and towards the posterior wall. (See Figure 1.)

The patient recalled that a tooth had been extracted ten years previously. I performed a radical operation and removed the tooth and much pus, by curettage. I subsequently administered short-wave therapy on twelve occasions, with the idea of assisting a healthy regrowth of the lining mucous membrane.

The discharge disappeared completely, and the patient has since greatly improved in health.

This case illustrates the necessity of routine X ray diagnosis before the treatment of sinusitis by short-wave therapy—as in other methods of treatment. Provided the case is suitable, short-wave therapy will give good results in acute and chronic sinusitis.

## Reviews.

### OPHTHALMIC NURSING.

THE volume "Ophthalmic Nursing", by Sister D. E. Grand, of Saint Thomas's Hospital, London, is a handy little book of about 100 pages.<sup>1</sup> It cannot be regarded as a text-book on ophthalmic nursing, as its chapters and sections are not very extensive; but it compresses the common sense of nursing into a small space. The chapter devoted to ophthalmic nursing contains only three pages; but in fairness it may be said that much nursing detail is included in the long chapter headed "Ophthalmic Conditions". One good chapter deals with ophthalmic remedies, and another enumerates and gives illustrations of many of the instruments required for individual operations. This section should be of great value to trainees and especially to nurses engaged in eye wards. A serious criticism is the entire omission of reference to bandaging, which is one of the most important features of ophthalmic nursing.

### NEUROLOGY.

SINCE Grinker's "Neurology" is being reviewed in the journal for the first time, when it has already reached its second edition, there need be no apology for a somewhat detailed reference to the general scope of the book.<sup>2</sup>

The opening chapter on general embryological considerations contains a fairly detailed account of the development of the central nervous system, and includes special reference to the *neuroblastosis* of Ariens Kappers. Dr. Grinker follows Bailey's scheme of histogenesis. The third chapter contains a description of the coverings and interstitial tissues of the central nervous system as well as sections on the cerebro-spinal fluid and intracranial pressure, which, we feel, might have been given greater space and even the dignity of a separate chapter. In this chapter also there are sections on the neuroglia which might more conveniently have supplemented the developmental data which appear earlier in the book, while the concluding part, which is a survey of neurochemistry, seems somewhat below the general standard of the work.

In the chapter on the motor unit a description of the nerve cells and fibres is followed by a useful account of electrical and other changes incidental to neuromuscular

excitation. Wilkinson's researches on the innervation of striated muscle receive due recognition both here and in a later chapter on muscle tone. The description of the vegetative system has largely been rewritten in the light of more recent work. The structure and functions of the diencephalon are described at length. Dr. Grinker then outlines the phylogeny of the cerebellum and adopts the scheme of archicerebellar, paleocerebellar and neocerebellar levels proposed by Ingvar. In the following chapter the author describes the mechanism of postural and tonic control, and, referring to the difficulty of applying the results of animal experiments to the elucidation of clinical phenomena in man, very aptly quotes: "Man is no cat, much less a rabbit." This section is followed by a chapter on the extrapyramidal system.

The cerebral cortex and its cyto-architecture are considered next, and in the same section Hughlings Jackson's concept of neurological levels is given in some detail. The cortical action currents revealed by electro-encephalography are also described.

The next chapter, on intracranial tumours, covers one hundred pages and is well illustrated by reproductions of encephalograms and microscopic sections. Descriptions of macroscopic and microscopic pathological appearances are indeed notable features throughout this work. Later sections are devoted to the anatomy and physiology of the cerebral vascular supply and disorders of the cerebral blood vessels.

Dr. Grinker advocates the use of convalescent serum in the preparalytic stage of anterior poliomyelitis and during the first few hours of paralysis as well. In other respects the treatment which he outlines follows conservative principles. He deprecates "meddlesome orthopedic therapy" in the acute stage.

In the chapter on syphilis of the nervous system the author states that 25% of syphilitics develop some form of neurosyphilis, an unusually high estimate; other authorities give a percentage of only three or four, although it is generally admitted that pathological changes not necessarily associated with clinical signs may be found in the cerebro-spinal fluid of at least fifty of every hundred patients during the secondary stage. Grinker states further that manifestations of syphilis have been found in 10% of all cadavers. He adds that head and spinal injuries so frequently precipitate the onset of general paralysis and of *tabes dorsalis* respectively, that the influence of trauma on syphilitic lesions has assumed great importance from a medico-legal standpoint. He goes on to say: "Since trauma undoubtedly plays an accessory role in the pathogenesis of syphilitic processes, compensation is usually granted, although syphilis was present long before the injury."

Describing more specifically the effect of trauma on the central nervous system, Dr. Grinker refers to Ricker's observations to the effect that vascular reactions to traumatic, thermal and other stimuli may be followed by diapedesis of the red cells and by anoxicemic necrosis with hemorrhage. These reactions form a likely basis for some of the post-traumatic sequelae which are so often dubbed "functional". In regard to the extirpation of cortical scars, the author remarks: "As yet I have not seen this procedure act to stop convulsions if all sedative material such as luminal is withdrawn."

Electro-encephalography receives further recognition in the chapter on the epilepsies. The effect of exogenous toxins on the central nervous system is discussed, and a warning is given against the excessive and prolonged exhibition of ergotamine tartrate in migraine owing to the danger of damage to the peripheral vessels. Multiple sclerosis is included among the degenerative diseases, although Dr. Grinker supports the idea that the lesions of this disease are primary and inflammatory. Here, as elsewhere, we might question the author's classification of his material. Nevertheless, classification according to a pathological rather than a clinical basis is evidently the guiding principle throughout this work. By the same token Dr. Grinker makes only a passing reference to the neuroses and psychoses, "because sufficient knowledge is not yet at hand to integrate those clinical aspects into the body of the biological data concerned with the nervous system".

<sup>1</sup> "Ophthalmic Nursing", by D. E. Grand, with a foreword by A. C. Hudson, M.D., M.A., M.B., Ch.B., F.R.C.S., L.R.C.P.; 1938. Edinburgh: E. and S. Livingstone. Crown 8vo, pp. 120, with illustrations. Price: 4s. net.

<sup>2</sup> "Neurology", by R. D. Grinker, M.D.; Second Edition; 1936. London: Baillière, Tindall and Cox. Crown 4to, pp. 1010, with illustrations. Price: 38s. net.



Numerous illustrations of excellent quality throughout this work add much to its value, and after every chapter there is a full list of references.

While we can hardly repeat the trite comment that the book should find a place on every practitioner's book-shelf, we might say that it is sufficiently comprehensive and informative to merit addition to the library of every physician. Indeed, nothing that we can say will carry more weight than the fact that a second edition has appeared within three years of the book's first publication.

#### THE UNIVERSITY OF SYDNEY.

THE third edition of Mr. Robert Dallen's book on the history and progress of the University of Sydney has recently appeared.<sup>1</sup> The first edition was published in 1914 and the second in 1925, so that much has necessarily been added to bring this new edition up to date. All graduates of this oldest colonial university in the British Empire will be interested in the information supplied, which is not readily accessible elsewhere. Mr. Dallen has dealt exhaustively with the development of the university from its inception, with the men who made it, with the buildings that house it and with the heraldic symbols that preserve its traditions. He has also given an interesting biographical sketch of the ten chancellors.

The sections dealing with the manner in which the university is governed and with the various departments are of practical value. The hospitals attached to the medical school have not been forgotten and excellent aerial photographs of the Royal Prince Alfred Hospital and Sydney Hospital are included. It is strange that there is no mention of the Prince Henry Post-Graduate Hospital. Short histories of the various colleges within the university, including the Teachers' Training College, are given. Some account is also supplied of the less well-known activities of the university, such as the work of the University Extension Board. There is also a section dealing with the New England University College.

The book is well printed on art paper and is pleasantly bound. It is not, however, free from minor inaccuracies. The most regrettable of these occurs on page five, immediately under the heading "The University of Sydney". Here the university's motto is given with the two last words transposed. The motto is the final line of a stanza in the Alcaic metre, and this unfortunate slip entirely destroys the scansion. Of the numerous photographs with which the book is adorned, most are of great interest. Some, however, are vague and indistinct; in particular, a photograph of Sir Mungo MacCallum is very blurred. Let us hasten to add, however, that those of the stained glass windows and of the coats of arms in the Fisher Library are excellent. The book should make an attractive and informative addition to the shelves of graduates. Its price is moderate.

#### ENDOCRINE DISORDERS.

STILL another book dealing with endocrine diseases has appeared, but it is one of the briefest of all modern accounts of the subject. Its title is "Major Endocrine Disorders", and it has been written by Dr. S. Levy Simpson, whose name is familiar as a student of endocrinology and who is well equipped for the difficult task of compressing into less than 200 pages most of what a busy practitioner wants to know on the subject.<sup>2</sup> The brevity, which is a welcome feature of this little book, is occasionally a drawback; for it cannot be said that his accounts of *diabetes mellitus* or

even *thyreotoxicosis* are really satisfying. The subjects are too wide to be treated in brief. In any case these are more familiar topics than most of the other derangements of ductless glands; it is with the less known maladies that help is more generally needed. But the practitioner who wishes to have at hand a good summary of the principal features of the syndromes associated with disorders of the pituitary, adrenal or parathyroid gland or with the disturbances of gonadal function will find a very clear and simply expressed account in this little volume. It is essential for everyone interested to have accurate knowledge of the important aberrations of growth and development, both as regards the general physical structure and the sexual characteristics, and most of the recent advances of endocrinology concern these functions. Dr. Levy Simpson's book describes all these very well. It is surprising that so much information is packed into a small compass with no sacrifice of the facility with which the book can be read. A table at the end of the volume gives a list of a number of suitable preparations of hormones with their sources and their strengths.

This work can be recommended to those who want a succinct and reliable clinical account of endocrine disorders without disturbing inroads into biochemistry. It is well printed on excellent paper and a number of apposite illustrations increase its value.

#### Notes on Books, Current Journals and New Appliances.

##### MENTAL NURSING.

DR. I. M. SCLARE's "Mental Nursing in Observation Wards" is a work of merit.<sup>3</sup> Although, as its title implies, it is written for those working in observation wards, it may be read with advantage by all engaged in mental nursing.

The various mental diseases are illustrated with short and apt notes on cases, which add to the interest and make the subject matter more easily understood. There is much that is valuable from a practical point of view, sound advice being given on the treatment for each mental disorder. Although a small one, the book covers a great deal of ground and is loaded with useful facts presented in an entertaining manner.

##### "GROWING UP."

THOUGH there is no lack of books for children on the subject of sex, "Growing Up", by Dr. K. de Schweinitz, fills a long felt want on account of its simplicity of language, its clear exposition and the attractive set-up of the book as a whole. There are no evasions, no apologies, no hesitations of approach, but a practical statement of actual facts—which is what appeals to a child. No other book on this subject is just in this manner and none is so eminently suitable for placing in the hands of youngsters themselves. The tone is healthy and the pictures and diagrams are just those that are required to supplement the reading matter. The book is written so simply that a little child can understand it, although the little child is usually content with much less detail than the book supplies. The quest for greater knowledge comes with the teens, and for this reason we could wish that the changes of adolescence had been dealt with as well. Such information should, in the opinion of some experienced teachers, precede the instruction given in "Growing Up".

<sup>1</sup> "The University of Sydney: Its History and Progress from its Foundation in 1852 to 1935, together with Short Biographical Sketches of its Ten Chancellors, by R. A. Dallen, O.B.E.: 1935. Australia: Angus and Robertson Limited. Crown 4to, pp. 60, with numerous illustrations. Price: 5s. net.

<sup>2</sup> "Major Endocrine Disorders", by S. L. Simpson, M.A., M.D., M.R.C.P., with a foreword by Sir Walter Langdon-Brown, M.A., M.D., F.R.C.P.: 1935. London: John Bale Medical Publications Limited. Crown 8vo, pp. 194, with illustrations. Price: 10s. 6d. net.

<sup>3</sup> "Mental Nursing in Observation Wards", by I. M. Sclare, L.R.C.P.S., with a foreword by A. S. M. MacGregor, O.B.E., M.D., D.P.H.: 1935. Edinburgh: E. and S. Livingstone. Crown 8vo, pp. 260. Price: 6s. net.

<sup>4</sup> "Growing Up: The Story of How We Become Alive, are Born and Grow Up", by K. de Schweinitz; Second Edition, revised: 1935. Australia: Angus and Robertson Limited. Large crown 8vo, pp. 95, with illustrations. Price: 6s. net.

## The Medical Journal of Australia

SATURDAY, JANUARY 7, 1939.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

### THE CULTIVATION OF THE TUBERCLE BACILLUS.

It is a remarkable fact that, although the tubercle bacillus has never defied cultivation, and was indeed recovered in culture by Robert Koch in his classic research in 1882, until recent years no extended use has been made of the cultural method in the bacteriological diagnosis of tuberculosis. We have reason to believe that the medical profession at large does not realize what can be accomplished in this direction, and that the majority of sanatoria and public health laboratories still rely on the microscopic search of film preparations to disclose the presence of tubercle bacilli in sputum, and resort to guinea-pig inoculation to reveal them in such specimens as urine and pleural exudates.

The technique of culture of the tubercle bacillus has now advanced to such a stage that many workers assert that the cultural method equals in sensitivity that of guinea-pig inoculation. That this belief is well founded may be judged from the work of Shrewsbury and Barson, of the University of Birmingham, who showed that the method of culture employed by them yielded 100% of successful cultures of the tubercle bacillus from a diversity of specimens, comprising sputum, cerebro-spinal

fluid, urine, faeces and pus. The same workers demonstrated that of 135 samples of sputum, in which tubercle bacilli could not be detected microscopically, 29 (21.4%) were tuberculous by cultural examination. Similar findings have been recorded by C. A. Green, from the bacteriological department of the University of Edinburgh. He reported that in the examination of 2,796 specimens of sputum for the presence of tubercle bacilli, the positive findings by cultivation exceeded those attending the microscopic examination of films by nearly one-third (32.4%). More striking perhaps in this particular are the figures of Corper and Cohn, who have published results of a routine examination for tubercle bacilli in "microscopic negative sputums" by various culture methods. The aggravated journalese is deplorable; but the findings are impressive. Of 100 samples of sputum, in which "negative" results were consistently obtained in the monthly examinations of film preparations over periods ranging from four months to two years, one-half yielded a "positive" finding by a single cultural test.

The significance of these findings as a compelling indication for the adoption of routine culture of sputa under suspicion as tuberculous is obvious. The film method for the detection of tubercle bacilli in sputum is shot through with loopholes and it is disquieting to reflect that patients are being regularly discharged from sanatoria, to return to their homes and mix with young children, on the unreliable evidence of non-infectivity afforded by several consecutive failures to find the organism by the film method. Attention has already been drawn to the situation by Dr. M. J. Holmes, in an address delivered at the plenary meeting of the last session of the Australasian Medical Congress. We emphatically endorse his advocacy of the institution of routine culture for the examination of sputa in sanatoria, public health laboratories and tuberculosis clinics.

Sputum being the principal vehicle by which tuberculous infection is disseminated, we have given it primary consideration; but direct cultivation is just as efficacious for the demonstration of bacilli in other products of tuberculous activity as

in sputum. It is still the practice in many laboratories, when the search by microscope has failed, to resort forthwith to guinea-pig inoculation, with no consideration of the prospect of revealing tubercle bacilli offered by cultivation. In view of the reliability and sensitivity of present-day methods of cultivation it is questionable whether the guinea-pig should be permitted to retain the exalted position that he has held in the past. Indeed, it is not difficult to find in the relevant literature reports by accredited workers in which direct cultivation of tubercle bacilli has improved upon the results obtained by guinea-pig inoculation. One such communication is that of Norton, Thomas and Broom, issued from the Department of Public Health, Detroit, Michigan. One phase of this report dealt with the application of cultural methods and animal inoculation in parallel, to 151 miscellaneous specimens suspected of having a tuberculous origin. A positive finding was recorded by both methods in 35 instances; the guinea-pig method succeeded three times when the culture failed; but cultivation registered 16 successes in cases in which the inoculation method failed. These data left the advantage with the cultural method; but neither procedure proved infallible. Such an impartial and authoritative commentator as Professor G. S. Wilson concludes that at present the cultural and the animal techniques yield very similar results, though he is inclined to award what advantage there may be to the guinea-pig.

It can be argued reasonably that even if the inoculation technique has proved slightly more sensitive, its minimal superiority is offset by other factors, which favour the cultural method. In small laboratories facilities for keeping animals are often lacking or are inadequate for proper isolation. Culture methods are much the less expensive and declare the result three or four weeks sooner than the guinea-pig is in the habit of divulging it. The traditional laboratory guinea-pig now appears as an over-rated little animal, representing a trifle more than 50% of the resources available for the detection of the tubercle bacillus when microscopic examination fails. Like Dryden's Alexander he has "fallen from his high estate", at

least to the extent of being compelled to recognize a rival of equal efficiency in a domain in which he was for so long unchallenged. Obviously the method of guinea-pig inoculation cannot be extended to cope with the enormous number of specimens of sputa sent to public health laboratories; but the cultural method has no such limitations.

The best results will be obtained when clinicians cooperate with laboratory workers (particularly with those in public health and public hospital laboratories) of whom multiple routine examinations are often demanded with little real justification. These fruitless labours dissipate time and energy that could, with greater advantage, be expended in the more precise examination of a smaller number of judiciously selected specimens.

### Current Comment.

#### PROTAMINE ZINC INSULIN.

E. P. McCULLAGH has reported his observations on the management of sixty diabetic patients, some of whom had been treated with various preparations of protamine insulin since February, 1936.<sup>1</sup> Since August, 1936, all the patients in this group received protamine zinc insulin.

Estimates of the duration of activity of a single dose of protamine zinc insulin in the human subject have been obtained from different types of observations. One method is to note the effect on the blood sugar level of a single dose given with one meal, after which the patient is required to fast until the blood sugar level tends to rise again. In mild cases hypoglycæmia can be maintained for a period as long as thirty hours. A second method is to determine the number of hours during which blood sugar levels can be controlled by one large dose when the diabetic is having regular meals. This form of observation is applicable to cases of diabetes in which the blood sugar concentration is almost, but not entirely, controlled by diet alone. A third method, and a clinical one, is to observe the cumulative effect of a daily dose of the drug over the first three days of its administration. The maximum cumulative effect seems to be on the third day. Apparently the dose given on the first of three days is still somewhat active on the third. It becomes manifest that a reduction in dosage as compared with that of ordinary insulin is essential. The cumulative influence of a single matutinal dose of protamine zinc insulin can be demonstrated if the average fasting blood sugar levels of a series of patients during the first few days of control with this form of insulin are com-

<sup>1</sup> *Annals of Internal Medicine*, May, 1938.



pared with the average fasting blood sugar levels preceding its administration. As the duration of activity of each dose of protamine zinc insulin is more than twenty-four hours, little or no advantage is gained from more than a single daily dose. Although the effect persists for more than twenty-four hours, it is generally diminished after eighteen hours. Accordingly, it is wise to give the single daily dose more than eighteen hours before the low level of the day. This, regardless of the time of administration of the insulin, is generally before breakfast. Accordingly, McCullagh usually gives a single dose prior to breakfast. In a few instances a second daily dose may be advantageous and, when the diabetes is very severe, even better control may follow the supplementary exhibition of ordinary insulin.

McCullagh states that, in estimating the dosage of protamine zinc insulin, the physician should remember that the effect is cumulative, and that the total daily requirement must be less than that of ordinary insulin. With improvement in control, the dosage may subsequently be greatly diminished. When control is inadequate and rapid improvement may be expected, the cumulative effect may be fraught with danger. When ordinary insulin is in use and stable control has been obtained, immediate substitution of protamine zinc insulin may be made; but the doses should seldom be as great. In cases of moderate severity McCullagh gives one dose of protamine zinc insulin equivalent to 80% of the regular insulin needs. In the more severe cases a pronounced rise in blood sugar levels during the first few days is apt to happen, whereupon sugar makes its appearance in the urine; but acidosis of consequence has not been noted. If the rise in blood sugar levels during the first two days of such a transition period be excessive, it may be obviated by the addition of one or two doses of ordinary insulin. These need not exceed more than one-tenth of the previous regular insulin requirements.

McCullagh remarks it as a noteworthy fact that with the use of protamine and protamine zinc insulin the blood sugar may reach 40 milligrammes per centum or less without reaction. When reactions do occur, they are usually mild and gradual. This fact makes it more difficult for the patient to detect their approach. As the effect of the drug is prolonged, the reactions are also apt to be extended and to recur after treatment. Profound hypoglycæmia may occur without marked symptoms. This applies particularly to elderly and arteriosclerotic patients. Amongst the subjective manifestations that may indicate the existence of hypoglycæmia are fatigue, tingling, slight disorder of memory, irritability, disturbance of speech, mild nausea and headache.

Protamine zinc insulin is superior to the earlier preparation, protamine insulin. At the same time, certain disadvantages attending the employment of the newer drug have not been sufficiently emphasized. Although better control of the hyperglycæmia may be obtained with it as a rule, in the

severe cases regulation may be more difficult; hence it is imperative that the physician should have a more intelligent understanding of the problem than was previously necessary.

#### URTICARIA.

MANY mysterious examples of urticaria induced by emotional stimuli or suggestion are described in the older literature. It is evident, clinically, that mental states play an important part in many skin conditions, from the stigmata of the mystics to teething rashes. But dermatologists have hesitated to accept this clinical evidence, because there has been no known mechanism by which mental stimuli could produce cutaneous lesions. According to J. G. Hopkins, B. M. Kesten and O. G. Hazel,<sup>1</sup> these phenomena have been brought out of the realm of the miraculous by the work of Grant and his associates, who have shown that the lesions of generalized urticaria may be produced by the release of acetylcholine at the terminations of cutaneous nerves. M. B. Bender<sup>2</sup> has recorded the similarity of the "fright reaction" in monkeys to the effects produced by injections of acetylcholine and has suggested that an excess of acetylcholine is produced during fright or excitement. Here then is a demonstration of a mechanism by which a psychic stimulus can produce a definite lesion in the skin. Hopkins and his co-workers present some interesting observations on generalized urticaria provoked by heat, physical exertion, or emotional excitement. The exciting causes most frequently mentioned by their patients were the taking of hot baths, remaining in warm rooms, exposure to summer sun, and standing in front of a fire or cooking stove. Some patients had had attacks after eating hot food, or after physical exertion. Others stated that excitement, anger or nervousness had brought on attacks. The lesions of this type of urticaria are said to be quite characteristic.

A bright flare from 2 to 5 centimetres in diameter appears first, and then, in the centre, a round white wheal from 2 to 5 millimetres in diameter. When the lesions are confluent, huge blotches of erythema are seen.

For the most part these patients are active healthy persons; the essential abnormality is that acetylcholine produces blotches and wheals in their skins. This response resembles the reaction of the normal skin to histamine, and Grant has therefore suggested that acetylcholine may cause a secondary release of histamine from the cutaneous cells. Slight reactions of this type are common. Quite a number of people have a few hives or plaques of erythema if they take an unusually hot bath or play a violent game of tennis. In its severer forms, this type of urticaria may be a real affliction. The treatment of these patients furnishes an argument against rigid specialization in medicine, for it requires a sympathetic consideration of the afflicted person rather than a series of meticulous and perhaps mechanical examinations and tests.

<sup>1</sup> Archives of Dermatology and Syphilology, November, 1933.

<sup>2</sup> The American Journal of Physiology, March, 1933.

## Abstracts from Current Medical Literature.

### GYNAECOLOGY.

#### The Theca Interna Cone and Its Role in Ovulation.

ERWIN D. STRASSMANN (*Surgery, Gynecology and Obstetrics*, September, 1938) has studied eighteen thousand serial sections of ovaries from humans and mammals. He considers that ovulation is a mechanical process stimulated by the endocrine glands. Its mechanism can be understood only by determination of the way in which the follicle reaches the surface of the ovary. He contrasts the eccentric growth of the follicle with the concentric growth of pathological cystomata. The eccentric growth causes the movement of the follicle to the surface of the ovary. The theca interna is responsible for this eccentric growth. Proliferation of theca interna cells at the pole of the follicle nearest to the surface of the ovary produces a cellular cone, which penetrates the surrounding tissues, thus making a path for the growing follicle. Unlike the theca, the wedge-shaped portion of granulosa that is seen at the base of the cone of theca possesses no active propulsive power. The soft mass of rapidly growing cells at the base of the cone of theca provides an area of lesser resistance, allowing for expansion of the granulosa layer at this site. When ascent of the follicle through the ovarian stroma and the cortex is completed, protrusion commences. The theca interna cone flattens out, forming a straight line. Proliferation ceases, and the membrane between the interior of the follicle and the peritoneal cavity becomes progressively thinner. Circulation at the vertex of the follicle is interfered with by internal pressure. Atrophy sets in at the stigma. The rupture of the follicle takes place in a very smooth manner. The article is illustrated with numerous drawings and photomicrographs.

#### Granulosa-Cell Carcinoma.

EDGAR H. NORRIS (*The American Journal of Cancer*, August, 1938) adds the report of a case of granulosa-cell carcinoma to the hundred odd already recorded in the literature. The patient was aged fifty-two years, menstruation had been irregular for two years, and daily bleeding had occurred during the preceding six weeks. On examination, both the uterus and the left ovary were found to be moderately enlarged. The uterus and both ovaries and tubes were removed. The uterus contained a small fibroid tumour and the endometrium was hyperplastic; the right ovary and tube were normal. The left ovary was irregularly oval in shape, being seven centimetres in its longest diameter, and histologically

presented the characteristic appearance of a granulosa-cell tumour. The author remarks that the majority of such tumours are solid, and cut sections have a fleshy, granular surface divided by fibrous trabeculae. Cysts are not commonly present. The histological structure varies from typical follicle-like structures, broad epithelial bands and narrow cords, to a sarcoma-like appearance. The author does not favour a classification of the granulosa-cell carcinomata on the basis of their differing histology, and rejects Cohnheim's theory of origin from cell rests. The granulosa-cell carcinoma is defined as a malignant tumour of the ovary, which, if untreated, causes death from metastases, which characteristically shows granulosa-like cells, and which is associated with the signs and symptoms of a high level of oestrin in the blood. Early removal of the tumour offers the only hope of cure.

#### The Value of Insufflation of Tubes During Laparotomy.

W. SCHMIDT (*Monatsschrift für Geburtshilfe und Gynäkologie*, August, 1938) discusses the value of tubal insufflation during abdominal operations. He prefers this method of detection of tubal patency to the use of the vaginal route, as there is much less risk of embolism. He uses a "Record" syringe without the needle, inserts the nozzle into the fimbriated end of the tube, and observes whether the air passes freely into the uterus. In cases in which the fimbriated end is closed, he incises it and leaves a strand of catgut *in situ* to maintain patency of the tube. The details of a case in which pregnancy followed this procedure are given. When the tubes have to be removed, as in gonococcal salpingitis, the author advocates implantation of an ovary with its blood supply intact into the uterine wall. Pregnancy has been observed to follow such implantation in from 25% to 40% of cases.

#### Fertility after Extrauterine Pregnancy.

C. W. MAYO and E. O. STRASSMANN (*Surgery, Gynecology and Obstetrics*, July, 1938) discuss the treatment of extrauterine pregnancy and analyse the results obtained at the Mayo Clinic during a ten-year period. In 142 cases there were no deaths due to operation, the only death during the period being that of a woman who came to the clinic in a state of profound shock and died before any surgical procedure could be attempted. Conservative operations are always performed. Although ectopic pregnancies recur in about 3-9% of cases, the possibility of intrauterine pregnancy is about ten times greater than the probability of another ectopic pregnancy. Therefore conservative surgery is advisable, to preserve fertility. Only if the other tube is severely diseased should it be removed. In this connexion it should

be remembered that the non-pregnant tube in more than half the cases of tubal pregnancy undergoes certain acute changes, such as swelling, redness and peritoneal friction, produced by haematomata. These changes more or less disappear and do not interfere with subsequent fertility.

#### The Treatment of Menorrhagia.

J. VON KUP (*Deutsche medizinische Wochenschrift*, July 8, 1938) has investigated the cause of uterine bleeding following dental extractions. He maintains that if the menstrual history is carefully inquired into, evidence will be produced of irregularities that are associated mainly with deficiencies of the corpus luteum hormone. In his cases the menorrhagia following dental extractions was controlled only by injections of luteal hormone. He suggests that the reason for haemophilia occurring only in men is the fact that the luteal hormone is peculiar to the female and is not common to both sexes as are all the other hormones.

#### Repair of the Cervix.

NORMAN F. MILLER and OLIVER E. TODD (*Surgery, Gynecology and Obstetrics*, September, 1938), in the treatment of the more extensive benign lesions of the cervix in women who have passed the child-bearing period, use diathermy with the cutting current properly combined with coagulation to remove a conical central portion of the cervix, which may include all the gland-bearing tissue. The bloodless procedure is carried out in hospital under gas anaesthesia. An iodoform wick is left in the cervical canal for three days, after which the patient is discharged, and instructed to douche daily and to return for treatment twice a week. On these occasions the cervix is painted with an antiseptic solution, and a sterile sound is passed into the canal. Epithelialization is complete in six weeks. Occasionally strictures occur, and to avoid these the patients need to be carefully selected and carefully observed afterwards. If this procedure is used before the menopause there is a tendency to early interruption of subsequent pregnancies. This procedure, in the author's opinion, may replace the Sturmdorf operation, and could often be used instead of trachelorrhaphy. At times it is also used prior to subtotal hysterectomy.

### OBSTETRICS.

#### Deflexion Attitude of the Foetal Head.

D. J. FRESSER (*Monatsschrift für Geburtshilfe und Gynäkologie*, May, 1938) discusses the aetiology and treatment of vertex presentations with insufficient flexion of the head. This is often associated with ante-flexion of the uterus or rigidity of



the cervix. In cases in which the head has already entered the pelvis, full flexion may be delayed by outlet contraction or by poor development of the *levator ani* muscles. The uterine contractions are generally powerful and cause compression of the placental site, with resultant fetal asphyxia. The author advocates the use of an abdominal binder at the onset of labour. He also considers that the obstetrician should push up the anterior end of the fetal skull with the finger during uterine contractions. In the application of forceps care should be taken that traction is exercised downwards and backwards until the posterior fontanelle is the lowest point in the pelvis, before the blades are swung forwards and upwards.

#### Complete Perineal Laceration.

L. VÉGH (*Monatsschrift für Geburtshilfe und Gynäkologie*, April, 1938) discusses the etiology and prophylaxis of complete laceration of the perineum during labour. He considers that it occurs most frequently when some degree of bony contraction of the pelvic outlet is present, and particularly when there is considerable shortening of the posterior sagittal diameter. In such cases the presenting part impinges on the posterior portion of the *levator ani*, causing rupture of its fibres and extra strain on the muscles converging on the central tendon of the perineum. As this is connected with the external sphincter, a tear soon involves the anus and anterior rectal wall. The various methods of protecting the perineum are discussed. The author prefers a lateral episiotomy, which should be performed before the perineum is over-distended.

#### The Etiology of Extrauterine Pregnancy.

A. J. OSIÁKINA-ROJDESTVENSKAIA (*Surgery, Gynecology and Obstetrics*, September, 1938) considers that the etiology of tubal pregnancy may depend on one or more of three factors. The first is a peculiar faculty of the female reproductive cell to impart to the fertilized ovum the capacity for premature implantation; this includes cases of external migration of the ovum. The second is disturbed transportation of the ovum due to impaired "motor capacity" of the tube. The third is mechanical obstruction encountered by the ovum on its journey. The outstanding cause is the second factor. In all probability it is the sole cause of the tubal pregnancy, whilst the first and third play merely a relative part and must be accompanied by disturbed transportation, however slight, to cause tubal pregnancy. The "motor capacity" of the tube depends greatly on the influence of the vegetative nervous system. From a study of one hundred cases of tubal pregnancy the author believes that the tubal implantation was due to the first factor in 10% of cases, to the second in 16%

and to the third in 76%. These last 76 cases are made up as follows: defects of tubal development (generally of post-embryonic development), 21; adhesions of tubal folds, 21; inflammation, 14; tubal adenomyosis, 9; pronounced decidual reaction, 8; tumours displacing the tube, 3. The author, considering that both excessive decidual reaction and adhesion of folds are due to insufficient differentiation of the tubal mucous membrane, found that defective development (especially post-embryonic) of the tube was the etiological factor in 50% of the cases of tubal implantation. He concludes that improvement of living conditions, diminution of the incidence of infectious diseases, and better working conditions for growing girls, may reduce the percentage of extrauterine pregnancies.

#### The Etiology of Abortion.

P. HÜSSY (*Monatsschrift für Geburtshilfe und Gynäkologie*, May, 1938) discusses the effect of trauma, especially from bicycle and motor-car accidents, as a cause of abortion. After an exhaustive survey of the literature he concludes that such trauma seldom produces evacuation of the uterine contents. Interruption of pregnancy will follow mechanical interference with the uterus if the ovum is separated or if the membranes are ruptured. Because of its situation the uterus is well shielded against generalized trauma from motor-car accidents. Trauma cannot be established as the cause unless the abortion has occurred within twenty-four hours of the accident, and any general condition likely to cause termination of the pregnancy has been excluded. This points to the need for a careful physical examination of the whole body before an abortion is ascribed to trauma.

#### Pitocin in the Third Stage of Labour.

M. R. WHITE (*American Journal of Obstetrics and Gynecology*, July, 1938) discusses the effect of pitocin on the duration of the third stage of labour. Pitocin was administered intravenously to 630 patients who had normal and abnormal pregnancies. After aspiration of three cubic centimetres of blood to dilute the pitocin, the mixture was slowly injected into a vein during a period of one minute. Expulsion of the placenta from the lower uterine segment and the upper part of the vagina was performed as soon as separation of the placenta was completed. Pitocin was selected because it produces no appreciable changes in the blood pressure and is a non-protein. It produces a contraction of the uterus within one minute of its intravenous administration. The indiscriminate use of pituitrin, which contains a pressor substance, is to be deprecated in this author's opinion, because of the constricting effect on the peripheral circulation, the depressor effect on the

heart and the likelihood of the production of shock. The loss of blood was less when pitocin was given intravenously, and the average duration of the third stage was 5.4 minutes.

#### Treatment of the Premature Infant.

H. VOLZ (*Monatsschrift für Geburtshilfe und Gynäkologie*, July, 1938) considers that three principles are involved in the correct treatment of the premature infant. These are the stabilization of the heat regulation mechanism, the prevention of excessive loss of fluids, and the administration of a diet of sufficient caloric value. The first objective is attained by the use of various forms of incubators. Loss of fluids can best be prevented by subcutaneous injections of 50 cubic centimetres of a hypotonic saline solution (0.7%) containing 2% to 5% of glucose and 0.5 to 1.0 cubic centimetre of "Cardiazol" in 100 cubic centimetres. Oedema will be prevented by such injections, while the "Cardiazol" stimulates the cardiovascular system, which is very unstable in these infants.

#### Pubiotomy.

W. SCHMIDT (*Monatsschrift für Geburtshilfe und Gynäkologie*, August, 1938) describes the obstetric history of a patient whose first labour ended with craniotomy. The author was obliged to perform pubiotomy for the second labour because of delay in fixation of the head. After separating the pubic bone, he inserted into the gap a bony graft taken from the pubis and measuring 3.5 centimetres by 1.0 centimetre. Despite some sepsis in the puerperium and sloughing of portions of the graft, there was a definite permanent increase in the pelvic girdle; for example, the true conjugate then measured nine centimetres instead of six centimetres. The details of two later labours are described, during each of which a child weighing 3.6 kilograms was delivered naturally.

#### Heart Disease in Pregnancy.

F. BENJAMIN CARR (*The New England Journal of Medicine*, August 18, 1938) has studied a series of fifty-seven deliveries of forty-eight women who had suffered from heart disease. Congestive failure was present during ten of these pregnancies. Onset of labour when the heart was still failing is recorded, and the importance of adequate medical treatment before delivery is emphasized. The author stresses the necessity for frequent and careful prenatal supervision. The two deaths in the series occurred in cases in which no prenatal care had been given. The methods of delivery were varied. Forty patients had normal deliveries, and there were two breech extractions, two versions, seven forceps deliveries and five Caesarean sections. Three of these latter were performed purely on account of the cardiac condition.



## British Medical Association News.

### ANNUAL MEETING.

The annual meeting of the Queensland Branch of the British Medical Association was held at the British Medical Association House, Wickham Terrace, Brisbane, on December 9, 1938, Dr. R. G. QUINN, the President, in the chair.

#### ANNUAL REPORT OF THE COUNCIL.

The annual report of the Council, which had been circulated amongst members, was taken as read on the motion of Dr. G. W. Macartney, seconded by Dr. N. M. Gutteridge, and was adopted on the motion of Dr. R. G. Quinn, seconded by Dr. Neville G. Sutton.

The report is as follows.

The Council has pleasure in presenting the following report of the work of the Branch for the year ended November 15, 1938.

#### Membership.

The membership of the Branch is 527, as against 520 in 1937. The additions have included: election of new members, 20; transfers from other Branches, 16; member reelected, 1; members reinstated upon payment of arrears of subscription, 2.

The losses have been due to: transfers to other Branches, 11; default in payment of subscription, 11; deceased, 9; resignation, 1.

In conformity with a decision of the Parent Body members of fifty years' standing have been appointed honorary members of the Association. The members of this Branch who come under this category are Sir David Hardie and Dr. A. B. Brockway.

During the year the Branch has sustained a loss by the death of a number of its members: Dr. W. N. Robertson, who was President on four occasions, 1905, 1916, 1917 and 1935; Dr. E. Sandford Jackson, who occupied the position of President in 1895, 1911 and 1926; Dr. F. A. Hope Michod, who was President in 1931 and Honorary Treasurer from 1927 to 1930; Dr. L. W. N. Gibson, who was Honorary Secretary from 1935 to 1937; Dr. Arthur Goode, Dr. P. N. MacGregor and Dr. George Thomson, of Brisbane; Dr. W. J. Fearnley, of Charters Towers; and Dr. F. W. R. Shaw, of Jundah.

#### Meetings.

##### General.

In addition to the annual general meeting, ten ordinary meetings of the Branch were held, of which two were clinical meetings. The average attendance at the ordinary Branch meetings was 29.

##### Council.

Twenty-two ordinary meetings and five special meetings were held by the Council. The special meetings were held for the following purposes: (a) consideration of the position of medical services at the Brisbane Hospital, (b) consideration of the amendment of By-Law number 54, (c) discussion of national health insurance (three meetings).

The record of attendances of members of the Council is as follows:

	Ordinary.	Special.
Dr. R. G. Quinn (President) .. . . .	22	4
Dr. Neville G. Sutton (President-Elect and Honorary Librarian) .. . . .	11	2
Dr. T. A. Price <sup>1</sup> (Past President and Federal Council Representative) .. . . .	16	3

<sup>1</sup> Absent on Federal Council Business.

#### Ordinary. Special.

Dr. Horace W. Johnson (Honorary Secretary) .. . . .	20	5
Dr. M. Graham Sutton (Honorary Treasurer) .. . . .	11	1
Dr. N. W. Markwell (Chairman of Committees) .. . . .	20	5
Dr. Noel M. Gutteridge (Honorary Secretary of Committees) .. . . .	16	4
Dr. D. Gifford Croil (Federal Council Representative and Councillor) .. . . .	17	4
Dr. P. A. Earnshaw (Councillor) .. . . .	20	4
Dr. Basil L. Hart (Councillor) .. . . .	18	3
Dr. Alan E. Lee (Councillor) .. . . .	16	5
Dr. S. F. McDonald (Councillor) .. . . .	14	1
Dr. H. S. McLelland (Councillor) .. . . .	16	2
Dr. Ellis Murphy <sup>2</sup> (Councillor) .. . . .	1	
Dr. W. J. Saxton <sup>2</sup> (Councillor) .. . . .	3	
Dr. J. G. Wagner (Councillor) .. . . .	19	4
Dr. C. E. Wassell (Councillor) .. . . .	19	4
Professor H. J. Wilkinson (Councillor) .. . . .	13	3
Dr. V. F. A. O'Neill (Northern Representative), Townsville .. . . .		
Dr. A. W. Fox (Western District Representative), Charleville .. . . .		
Dr. G. R. Woodhead (Wide Bay District Representative), Maryborough .. . . .	2	

#### Scientific.

February.—Dr. H. S. McLelland: "Maternity and Some of Its Problems."

March.—Clinical meeting combined with the Hospital for Sick Children Clinical Society.

April.—Dr. Alan E. Lee: "Goitre and Thyreotoxicosis."

May.—Professor H. J. Wilkinson: "Diencephalon."

June.—Dr. Charles H. Kellaway: "Cellular Response to Injury" (Joseph Bancroft Memorial Lecture).

July.—Dr. A. V. Meehan: "Orthopaedic Problems in General Practice."

August.—Dr. A. Jefferis Turner: "Experiences in Preventive Medicine" (Jackson Lecture).

September.—Professor H. R. Sedden: "Contacts Between Human and Veterinary Preventive Medicine."

October.—"A Symposium on Physiotherapy"; Dr. A. V. Meehan gave an introduction.

(1) Dr. Harold Crawford: "Physiotherapy in Disease and Deformity of Childhood."

(2) Dr. J. R. S. Lahr: "Physiotherapy in Relation to Posture."

(3) Dr. T. V. Stubbs Brown: "Physiotherapy in Relation to Fractures."

November.—Clinical meeting combined with the Mater Misericordiae Hospital Clinical Society.

The following is the personnel of the committee responsible for the arrangement of the programme of papers: Dr. P. A. Earnshaw, Professor H. J. Wilkinson, Dr. Ellis Murphy and the *ex officio* members of the Council.

The Royal Australasian College of Surgeons.—Members of the Branch were invited to a lecture given in connexion with the annual meeting of the Queensland Section of the Royal Australasian College of Surgeons on Wednesday, August 10, 1938, when a paper was delivered by Dr. H. R. G. Poate on "Anatomy in Surgery".

<sup>1</sup> On leave from March 2, 1938.

<sup>2</sup> Elected on January 14, 1938, to fill the vacancy caused by the death of Dr. L. W. N. Gibson.

**Office-Bearers.**

Dr. Neville G. Sutton was elected President-Elect and Dr. Horace W. Johnson was elected Honorary Secretary.

The following office-bearers were elected by the Council:

*Honorary Treasurer:* Dr. M. Graham Sutton.

*Chairman of Committees:* Dr. N. W. Markwell (reelected).

*Honorary Secretary of Committees:* Dr. Noel M. Gutteridge.

*Honorary Librarian and Curator of the Museum:* Dr. Neville G. Sutton (reelected).

**Councillors.**

It is with regret that we record the death of Dr. L. W. N. Gibson, who was a member of the Council and who previously occupied the position of Honorary Secretary of the Branch for three years. Dr. W. J. Saxton was appointed to fill the vacancy on the Council.

Dr. P. A. Earnshaw, who has been a member of the Council for the past two years, is not seeking reelection this year. The Council desires to express its appreciation of his services.

**Ethics Committee.**

The following were reelected members of the Ethics Committee at the annual meeting of the Branch held on December 10, 1937: Dr. Alex. H. Marks, Dr. Mervyn S. Patterson, Dr. G. P. Dixon, Dr. Gavin H. Cameron and Dr. G. W. Macartney.

This committee met on two occasions to consider a case referred to it by the Council.

**Library.**

Since the occupation of the Branch's new premises, the library appears to have been used more by members. One hundred and forty-five books were borrowed from the library by thirty-eight individual members.

The question of the medical library resources in Brisbane is under consideration and subcommittees have been appointed by the Faculty of Medicine and by the Council of the Branch to consider the matter.

We are indebted to the trustees of the following deceased members for gifts of books to the library: Dr. F. A. Hope Michod, Dr. E. Sandford Jackson and Dr. George Thomson. Dr. Harold Love also presented some medical publications. We were pleased to receive a copy of *The Proceedings of the Medico-Legal Society of Victoria, 1933-1936*, which was kindly presented to us by the Society.

Catalogues of the medical journals in the libraries of the New South Wales Branch, the Victorian Branch, the Royal Australasian College of Surgeons and the University of Melbourne have also been presented to the Branch library.

A number of medical students have made use of the library for reference purposes.

With the object of assisting country members who may require copies of articles from overseas medical journals *et cetera*, arrangements have been made for photographic copies to be made at a nominal cost.

**Representation.**

The Branch was represented as follows during the year:

*Council of the British Medical Association, 1937-1938:* Professor R. J. A. Berry.

*Representative Body, Annual Meeting, July, 1938:* Dr. Ellis Murphy (Representative), Dr. D. A. A. Davis (Deputy Representative), Dr. G. H. Brandis and Dr. H. J. Taylor (Delegates).

*Federal Council of the British Medical Association in Australia:* Dr. T. A. Price, Dr. D. Gifford Croll.

*Australasian Medical Publishing Company Limited:* Dr. D. Gifford Croll.

*Medical Officers' Relief Fund (Federal):* Dr. D. Gifford Croll, Dr. J. Cameron Hemaley, Dr. G. P. Dixon.

*Queensland Medical Board:* Dr. R. G. Quinn, Dr. Kenneth Wilson, Dr. D. Gifford Croll.

*Queensland Post-Graduate Committee:* Dr. S. F. McDonald, Dr. E. S. Meyers, Dr. Alex. Murphy, Dr. N. W. Markwell, Dr. Ellis Murphy, Dr. Neville G. Sutton.

*Queensland Cancer Trust:* Dr. B. L. W. Clarke, Dr. G. W. Macartney.

*Queensland Nutrition Council:* Dr. P. A. Earnshaw, Dr. N. M. Gutteridge.

*Queensland Bush Nursing Association:* Dr. L. Bedford Elwell.

*Animal Health Board:* Dr. D. Gifford Croll.

*Standards Association of Australia:* Dr. E. O. Marks.

*Ninth Australian Cancer Conference:* Dr. Aubrey Pye, Dr. E. W. Casey.

*Australian Aerial Medical Services:* Dr. J. G. Wagner.

*Health Inspectors' Association of Australia, Queensland Branch, Annual Conference:* Dr. S. F. McDonald.

The Editor of THE MEDICAL JOURNAL OF AUSTRALIA was represented by Dr. Joyce Stobo.

**Subcommittees.****Hospital.**

*Personnel:* Dr. Alan E. Lee, Dr. H. S. McLelland, Dr. C. E. Wassell, Dr. J. G. Wagner, and the *ex officio* members of the Council.

Seventeen meetings were held during the year. The matters of general interest which were dealt with were as follows:

*Brisbane and South Coast Hospitals Board.*—The reorganization of the medical services of the hospitals under the Board has been effected, and from November 1, 1938, the Honorary Medical Staffs were replaced by sixty-two part-time paid medical officers.

The Intermediate Hospital is now in full working order, as is also the new Women's Hospital, of which Professor G. Shedden Adam is the Medical Superintendent.

*Mater Misericordiae Public Hospital.*—A difference of opinion occurred between some members of the honorary staff and the administration. This resulted in the resignation of a number of medical men who had been members of the honorary staff for many years. Correspondence on the matter took place between the parties concerned and the Council of the Branch.

*Country Hospitals: Salaries of Medical Officers.*—The Council has adhered to its previously expressed opinion that £750 *per annum* is the minimum salary which should be paid to the medical officer of a country hospital where there is little or no private practice. This ruling was given in a number of cases submitted for consideration.

The President paid two visits to a country centre to confer with the hospital committee and the doctors on the question of the hospital medical services.

**Rules and Ethical.**

*Personnel:* Dr. D. Gifford Croll, Dr. P. A. Earnshaw, Dr. H. S. McLelland, and the *ex officio* members of the Council.

This subcommittee dealt with all matters of organization and general subjects upon which reports were made to the Council. It met on twenty-three occasions, and the following are some of the matters upon which subsequent action was taken by the Council.

*Questionnaire issued by the Director-General of Health to the Medical Profession regarding Health Services for the State.*—Members were advised with reference to answering the questionnaire.

*Conference on the Subject of Illegal Operations.*—A conference on illegal operations was held on December 6, 1937, when representatives of the Council and of the Medical Board of Queensland met the Minister for Health, the Director-General of Health and the Commissioner of Police. With regard to this subject the representatives of the medical profession are of the opinion that a public education campaign would be of great benefit in combating the evil.

*Medical Clinic.*—A local association requested a ruling with reference to the opening of a clinic by a medical man



at which a reduced fee was to be charged for consultations and medicines. A reply was sent to the effect that the Council considered it was undesirable that any individual practitioner should make drastic changes in current medical practice before consulting and obtaining the approval of his colleagues through their official Association.

**Concerted Action by Members.**—Members were circularized requesting them to await advice from the Council before taking action in any matter which involved a principle concerning the profession as a whole.

**Medical Fees Tribunal.**—The following is the personnel elected by the Council as a Medical Fees tribunal: Dr. D. Gifford Croll, Dr. G. P. Dixon, Dr. S. F. McDonald, Dr. H. S. McLelland, Dr. C. E. Wassell.

The Medical Fees Tribunal is a standing committee and its function is to deal with any matters in dispute with regard to medical fees and to give advice in any specified cases. The Government was informed of the appointment of this committee through the Minister for Health and Home Affairs, and the public was informed of its existence through the Press.

**Scale of Minimum Fees.**—The compilation of a scale of minimum fees is under revision by a special sub-committee, but has not yet been completed.

**Medical Certificates.**—The question of misleading and careless certificates given by medical practitioners has been under review and it has been decided to circularize members once again on this important matter.

**Certificates Issued on Behalf of the Railway Department.**—At the request of the Department members were circularized suggesting that they accept payment of 10s. 6d. for the first visit and issue of certificate in connexion with railway employees.

**Traffic Regulations.**—The President interviewed the Commissioner of Police with regard to the parking of cars on Wickham Terrace.

**Income Tax Deductions.**—Income tax deductions were discussed with the Commissioner of Taxes by the President. The Commissioner stated that deductions were allowed only in the case of expenditure that was made directly to obtain income; expenses incurred in post-graduate study were considered to be capital expenditure.

**Country Representation.**—For years past the Council has been anxious to provide a means of direct representation to country members. With this object in view certain members of the Council were chosen by country districts to act as their representatives on the Branch Council. This did not appear to be a satisfactory method, and last year each local association was requested to appoint a member from its district to act as its representative on the Council and to attend meetings whenever possible.

Apparently this method is not practicable, as only one local association was represented at two Council meetings during the year. A notice of motion has now been received by the Council (from one of the Council members) to provide for an annual conference of representatives of local associations with members of the Council. The main object of such an annual conference is to bring the separate local associations into closer relation with one another and with the Council.

**Infantile Paralysis.**—A special committee was appointed during the epidemic of poliomyelitis in Queensland, the representatives of the Branch being as follows: Dr. S. F. McDonald (Convener), Dr. P. A. Earnshaw, Dr. Harold Crawford, Dr. A. V. Meehan, Dr. G. A. C. Douglas. A report was drawn up by the committee regarding suggestions for hospital care of patients. A copy of this report was sent to the Director-General of Health and Medical Services, and also to the General Medical Superintendent of the Brisbane and South Coast Hospitals' Board. All the activities surrounding the treatment of patients with paralysis resulting from poliomyelitis have received the consideration of the committee.

The Report of the Royal Commission on the Investigation of Infantile Paralysis was published in December, 1937. Much of the work in compiling the report of the Commission was done by the late Dr. L. W. N. Gibson.

During the epidemic in Queensland, at the suggestion of the Council, a weekly bulletin of cases was issued by the Director-General of Health and Medical Services, and it was made available to members at the office of the Branch.

**Secretary Appointed Justice of the Peace.**—The Secretary (Mrs. Myra Spooner) has been appointed a Justice of the Peace. This should prove a convenience to members requiring the services of a Justice of the Peace.

**Treatment for Electric Shock.**—At the request of the State Electricity Commission, a circular was sent to members with a view to bringing to their notice a pronouncement made as to the length of time for which artificial respiration should be continued in cases of electric shock. This subject is receiving further consideration.

**Amendment of Articles of Association and By-Laws.**—Alterations were made to the following articles and by-laws:

Article 5, (b): "Membership—Eligibility."

By-Law 52: "Restriction as to *Locum Tenens* or Vendor of Practice Starting Practice."

By-Law 54: "Acceptance of Appointment as Medical Officer."

No member shall accept appointment as or act as medical officer of any association of friendly society lodges or of any person, body, society, or societies, or any combination of friendly society lodges or of any person, body, society, or association or group or combination thereof dealing in the provision of medical service under any contributory or insurance scheme, or make any such contract for medical attendance with any person, body, group, society, association, or combination except with the sanction of the Council.

By-Law 70: "Formation of Special Groups."

The amendments were printed and circulated among members.

**Organization of the Medical Profession in Australia.**—This question of organization of the profession in Australia is under consideration by the Federal Council. The Council of the Branch has expressed itself in favour of the formation of an Australian Medical Association in affiliation with the British Medical Association.

**Medical Officers at Baby Clinics.**—The Minister for Health and Home Affairs was approached by the Council, which pointed out that the baby clinics attached to the Child Welfare Department were now the only Government health activity staffed by honorary medical officers, and stated that the Council of the Queensland Branch of the British Medical Association was of the opinion that medical practitioners giving such service should receive adequate remuneration. A reply was received to the effect that there was no provision from which salaries or allowances could be paid to such medical officers during the currency of the financial year. It has been requested that the matter be reconsidered in the next financial year.

#### Public Education.

**Personnel:** Dr. P. A. Earnshaw, Dr. F. Lukin, Dr. H. S. McLelland, Dr. L. J. J. Nye, Dr. C. E. Wassell and the *ex officio* members of the Council. This committee has taken the place of the Publicity Subcommittee. Four meetings were held during the year. Rules regarding publication of matter have been drawn up, one of which is as follows:

That material for publication must be read and signed by at least one elected member of the Subcommittee or the Chairman and then approved by the President or President-Elect.

Dr. N. M. Gutteridge has been appointed Medical Editor.

Much valuable work has been done by a regular programme of health education broadcast over Station 4BH, under the title of "Healthward Ho". This work has been undertaken in conjunction with the Pharmaceutical Society of Queensland. The station time for this broad-



cast has been generously provided by 4BH on Tuesdays at 10.45 a.m. There has been evidence of considerable interest in this work.

Representatives of the Council attended a conference on the subject of a "Physical Fitness Campaign". This is a matter of considerable interest at the present time.

The pamphlets on "Adequate Nutrition During Pregnancy and Nursing" are still in demand and are available at the office of the Branch. Many members utilize them for distribution to their patients.

The "Year Book for 1937", issued by the Queensland Nutrition Council, was distributed to members of the Branch.

**The Nutrition Cinematograph Film.**—The British cinematograph film dealing with nutrition, which is jointly owned by the Post-Graduate Committee of the Branch, and the Queensland Nutrition Council, has been on circuit throughout the country towns of Queensland for the past six months. The main coastal towns have been covered and the film is now concluding its tour of south-western Queensland. An itinerary of the central west is now being arranged. The members of the Branch in the towns in which the film has been shown have been notified in advance, as far as possible, of the date of the exhibition of the film. Their cooperation in stimulating local interest has been valuable. A considerable amount of detail work involved in its tour has been facilitated by the courtesy and cooperation of Messrs. Fox Films, Limited (particularly Mr. D. Graham, the Brisbane branch manager), and the executive and members of the Queensland Motion Pictures Exhibitors' Association. The film was also shown to the delegates of the Commonwealth Conference of the Master Bakers' Association held at Brisbane recently.

**Queensland Nutrition Council.**—The British Medical Association representatives on the Queensland Nutrition Council continue to be active in the field of education and research in nutrition. A continuous policy of public education by medium of the Press and wireless has been maintained. Over two hundred broadcast sessions have been given during the past two years, and numerous Press articles have been published, including special supplements. This has been made possible by the courtesy and cooperation of Station 4BC, *The Courier Mail* and country newspapers.

An analysis by biochemical methods has been made of the vitamin C content of Queensland fruit and vegetables, and interesting results have been obtained. This was made possible by a grant of £100 by the Committee of Direction of Fruit Marketing.

The Queensland Nutrition Council is also associated with the Railway Department in an investigation into methods of refrigerated transport of fruit and vegetables to the western areas of Queensland.

A series of lecture-demonstrations in nutrition and cookery was arranged by the Council in conjunction with the Mothercraft Association. Seventy students, mainly young housewives, attended this course.

#### Lodge Contract Practice.

Although there is a lodge subcommittee of the Council, the majority of lodge matters are dealt with by the joint committee, which comprises three representatives each of the Friendly Societies Medical and Hospital Council and of the Queensland Branch of the British Medical Association. The joint committee met on four occasions during the year. Part of its function is to investigate and settle the occasional differences which occur between lodge members and medical officers. It has also been most valuable in bringing about a better understanding between the lodges and the doctors, and it provides an opportunity for personal contact and for the exchange of ideas which resolve difficulties associated with the different points of view.

The representatives of the Branch are Dr. T. A. Price, Dr. F. Lukin and Dr. J. G. Wagner.

**Metropolitan Capitation Fee.**—In accordance with an agreement between the Friendly Societies Medical and Hospital Council and the Branch, the capitation fee for

the metropolitan area was raised to 26s. per annum, as from July 1, 1938. This increase was announced through the Government Statistician's office in conformity with a rise in the Queensland nominal wage index.

#### National Health Insurance.

**Personnel of Committee:** Dr. T. A. Price, Dr. R. G. Quinn, Dr. D. Gifford Croll, Dr. N. W. Markwell, Dr. F. Lukin, Dr. Mervyn Patterson, Dr. L. P. Winterbotham, Dr. J. L. Selwood, Dr. H. W. Horn and Dr. A. E. Mason were co-opted members.

This committee has taken over the work previously performed by the General Medical Services Committee, and it includes the members of the General Practitioner Group Committee. Ten meetings have been held during the year.

An enormous amount of time has been given to national health insurance, and most members are fully aware of the position. In May, 1938, a vote of all members was taken, the result being that approximately 326 members intimated that they were not in favour of the capitation fee of 11s. mentioned by the Commonwealth Government, and 336 members agreed to the Branch Council's acting on their behalf. The Council appreciated this demonstration of confidence.

The Council would also like to place on record its sincere thanks to those members who came to Brisbane in September, 1938, to give evidence before the Royal Commission.

On September 20 an informal meeting was held to give members an opportunity of hearing the views of the senior counsel who was conducting the profession's case for the Federal Council of the British Medical Association, the late Mr. L. S. Abrahams, K.C. Dr. J. G. Hunter, the General Secretary of the Federal Council, was also present.

A great loss was sustained by the profession through the *Kyeema* air-liner disaster in October, which resulted in the death of the expert legal advisers of the Association.

A special committee has been appointed by the Federal Council to deal with national health insurance, a general practitioner representative from each State being included in the personnel. Dr. Mervyn S. Patterson is the Queensland general practitioner representative.

Although the matter is still *sub judice*, the Royal Commission has served a very useful purpose in demonstrating the position of the medical profession to the Government, to the public, and, not least, to itself.

Since 1934, the Queensland Branch, mainly through the efforts of Dr. T. A. Price, has been endeavouring to formulate a plan for a general medical service, based on the principle of a family doctor of its own choice for each family. The ultimate idea is to extend the policy to include a complete medical service, providing all necessary facilities for all classes of the community. The profession is greatly indebted to Dr. Price for the strenuous work involved in drawing up such a policy, to which he has devoted a great deal of time and thought. During the present year he has given practically the whole of his time to work on this matter and national health insurance.

#### National Health Insurance Emergency Fund.

The National Health Insurance Emergency Fund was created in June, 1938, to assist in defending and maintaining the interests of members of the medical profession in Australia in any matters relating to national health insurance. The result has been somewhat disappointing, as less than 50% of the members of the Branch have contributed to it. Half the amount collected in each State is being sent to the Federal Council for defraying the general expenses incurred. Already a large sum of money has been expended in presenting the profession's case before the Royal Commission.

#### Sections for Special Branches of Medical Knowledge.

##### Eye, Ear, Nose and Throat Section.

(Inaugurated in 1924.)

At the annual meeting, which took the form of a dinner, held on November 30, 1937, the following office-bearers

were elected for the ensuing year: *President*, Dr. F. G. Meade; *Vice-President*, Dr. T. M. Mansfield; *Councillor*, Dr. Ainslie Clowes; *Auditor*, Dr. L. T. Jobbins; *Honorary Secretary and Treasurer*, Dr. Athol F. Quayle.

On March 15, 1938, the quarterly meeting was held at the School of Anatomy, when Professor H. J. Wilkinson gave a lecture and demonstration on the "Development of the Ear". Other quarterly meetings were held on June 14 and September 20. A special meeting of the section was held on March 31. Cases of interest were exhibited and discussed at each meeting.

It is with deep regret that the section reports the loss of two valued members, Dr. W. N. Robertson and Dr. George Thomson.

#### *Surgical Section.*

(Inaugurated in February, 1927.)

Office-bearers for the year were: *President*, Dr. J. M. Thomson; *Honorary Secretary and Treasurer*, Dr. Alan E. Lee; *Committee*, Dr. E. S. Meyers, Dr. L. M. McKillop, Dr. R. G. Quinn.

Owing to the pressure of outside activities, mainly connected with hospital reorganisation, the Surgical Section has held no meetings during the year. It is intended, however, that it will resume its normal functions in the near future.

#### *Obstetrical Section.*

(Inaugurated on November 15, 1927.)

The annual meeting was held in February, 1938, when the following officers were elected: *President*, Dr. J. A. Cameron; *President-Elect*, Dr. Kenneth Wilson; *Statistical Committee*, Dr. R. G. Quinn, Dr. Kenneth Wilson and Dr. L. H. Foote; *Honorary Secretary and Treasurer*, Dr. L. H. Foote; *Extra Committee*, Dr. R. B. Charlton and Dr. Charles Marks. The incoming president read a paper on his midwifery experience spread over a long period in general practice (city and country).

Papers at the quarterly meetings were read by Dr. Robert Charlton ("Hyperemesis Gravidarum") and Dr. Harold Horn ("Eclampsia").

One meeting was combined with the Ipswich Clinical Society's meeting at Ipswich, where reports of selected cases in the records were read and discussed.

There has been an average of twelve members at the meetings, and the case records have now exceeded 4,000.

A welcome has been extended to the new Professor of Obstetrics, Dr. Shedden Adam, who has taken up his duties at the Women's Hospital and as the University Professor of Obstetrics.

#### *Medical Section.*

(Inaugurated on June 1, 1928.)

No meetings of the Medical Section were held during the year 1938.

#### *Radiological Section.*

(Inaugurated in March, 1930.)

No meetings of the Radiological Section were held during the year 1938. No subscriptions were asked for, as no expenditure was incurred.

#### *Affiliated Local Associations.*

##### *Downs and South-Western Medical Association.*

The twelfth annual general meeting of the local association was held on September 17, 1938.

*Meetings.*—During the year just concluded seven monthly general meetings were held, two committee meetings, and one special general meeting, to which invitations to all medical practitioners in south-western Queensland were sent, for the purpose of discussing the proposed national health insurance scheme.

Particulars of the general meetings are as follows:

In October, Professor Lee spoke on "Recent Advances in Reproductive Endocrinology". In December, Dr. B. B. Barrack and Dr. V. N. B. Willis discussed "Modern Treat-

ment of Venereal Disease". In March, Dr. H. S. McLelland lectured on "The Toxemias of Pregnancy". In April, Dr. E. S. Meyers and Dr. H. Crawford addressed a combined meeting with the Toowoomba Sub-Branch of the Australian Dental Association on "Some Anatomical and Pathological Considerations of Interest to Doctors and Dentists". In May, Dr. J. R. S. Lohs gave a demonstration of "Plaster of Paris Technique". In June, Dr. Neville Sutton spoke on "Some Surgical Emergencies". In August, Sir Raphael Cilento lectured on "The Changing Relationship of the Medical Profession with Regard to Government Administration".

The lectures and demonstrations given were much appreciated and our association is greatly indebted to the above gentlemen and to the Queensland Post-Graduate Committee for their assistance.

*Membership.*—The number of our financial members has fallen to 14 as against 18 the previous year.

*Finance.*—The financial statement presented shows a credit balance of 17s. 11d. as against £3 14s. 5d. for the previous year.

*Contract Medical Services.*—No meetings of the Contract Medical Service were found necessary, each member attending to the management of his own list as arranged during the previous year by the Queensland Branch of the British Medical Association.

*Acknowledgements.*—Our thanks are again due to the Toowoomba Hospitals Board for making accommodation available for our monthly general meetings and to Dr. T. A. Price for committee meetings respectively.

R. J. H. SPARK,

Honorary Secretary.

#### *General Practitioner Group.*

The General Practitioner Group of the Queensland Branch of the British Medical Association was formed on July 7, 1938. This body has taken the place of the Contract Practice Section.

The personnel of the committee is as follows: *Chairman*, Dr. L. P. Winterbotham; *Honorary Secretary*, Dr. F. Lukin; *Coopted Members*, Dr. J. L. Selwood, Dr. J. G. Wagner, Dr. H. W. Horn, Dr. A. E. Mason; *Ex officio Members*, Dr. T. A. Price, Dr. D. Gifford Croll, Dr. Mervyn Patterson. The membership to date is 90. Members of the committee are also included on the National Health Insurance Committee of the Branch.

#### *Rockhampton Local Medical Association.*

The annual meeting of the above association was held in June and the following officers were elected: *President*, Dr. W. E. Hasker; *Vice-President*, Dr. C. N. Matheson; *Honorary Secretary*, Dr. Trevor A. Parry.

Several meetings of the association have been held during the year, the main business being in connexion with the *National Health and Pensions Insurance Act*.

Among the resolutions carried were the following:

1. That the members of the Rockhampton Medical Association do not desire to accept any service under any national health insurance scheme controlled by the Government.

2. We are prepared to accept service in a suitable scheme controlled by the medical profession or in cooperation with the friendly societies.

During the year a circular letter expressing the views of this association was sent to all Branches of the British Medical Association and to all local medical associations.

TREVOR A. PARRY,

Honorary Secretary.

#### *Townsville Local Association.*

The officers of the association are as follows: *President*, Dr. V. F. O'Neill; *Honorary Secretary*, Dr. H. A. Sundstrup; *Honorary Treasurer*, Dr. L. Halberstater.



Numerous meetings were held during the year; but all of them were in connexion with the national health insurance question. As a result of our activities, a subcommittee consisting of Dr. O'Neill, Dr. Sundstrup and Dr. Baker was appointed to prepare the case for presentation to the Royal Commission for northern parity and western allowance. The cost of the preparation of the case was covered by subscriptions from neighbouring centres. The witnesses' costs were paid by the Queensland Branch.

H. A. SUNDSTRUP,  
Honorary Secretary.

#### *Cairns Local Medical Association.*

Another year has passed with very little to report of the activities of the Cairns Local Medical Association. Dr. A. M. Langan was elected President for the past year. Several meetings have been held, some of which were in connexion with the proposed national health insurance scheme. All members are of the opinion that it is not desirable.

Since the last annual report the local hospital has taken on a staff of three full-time medical officers to replace the two part-time men.

T. G. HEWITT,  
Honorary Secretary.

#### *Central-Western Medical Association.*

No meetings were held during the year, as it is impossible in this area for members to attend meetings, but considerable discussion took place through correspondence, particularly in regard to national insurance. The statement presented by the Honorary Secretary to the Council of the Association in September was considered to be an outline of the position as national insurance would affect members in this area. They are all definitely of the opinion that the mileage regulation in this area would be impossible and unworkable. The opinion is also expressed that in order to meet extra costs the capitation fee for the area should be at least 33½% in excess of that struck for city areas.

During the year the death occurred of Dr. W. R. S. Shaw, of Jundah, and we extend our sympathy to the relatives.

C. V. WATSON BROWN,  
Honorary Secretary.

#### *South Burnett Medical Association.*

During the past year this association has held only four meetings. Illness and unfortunate combinations of circumstances have restricted our activities.

On December 4, 1937, at Wondal, Dr. R. J. Nash read a paper on "Toxemias of Pregnancy", and a discussion on this and other obstetrical subjects took place.

At Kingaroy, on February 26, the subject of our discussion was "Fractures of the Upper Limb". On this occasion as at our previous and subsequent meetings the afternoon was occupied examining patients and discussing cases of interest at the district hospital.

Our next meeting was held at Wondal on May 7, and for this meeting Dr. Kenneth Wilson came up from Brisbane to give a very instructive and stimulating address on "Present Ideas on Obstetrics".

On September 9, after an afternoon spent in discussing cases, the evening was taken up with an informal discussion of medico-legal matters.

As yet we have not held our annual meeting.

R. V. RICKARD,  
Honorary Secretary.

#### *Maryborough Local Medical Association.*

The Maryborough Local Medical Association reports another successful year.

At the annual meeting the following office-bearers were elected: *President*, Dr. Egmont Theile; *Vice-President*, Dr. W. H. Nette Biggenden. Dr. G. R. Woodhead was elected North Coast Representative on the Branch Council. He attended as many meetings as possible and also repre-

sented the local association at the general practitioner meeting on national health insurance held at Brisbane in July. We feel that direct country representation on the Branch Council is a step in the right direction.

The monthly clinical meetings were well attended and were held fairly regularly.

During the year we had two visits from Brisbane men. The first was in February, when Dr. Bruce Barrack contributed a most interesting paper on "Skin Diseases" and Dr. Hugh McLelland on "Gynaecological Operations".

In September, Dr. John Power and Dr. Bruce Mayes read most practical papers, the former on "Ureteric Calculi" and the latter on "Caesarean Section with Particular Reference to Lower Uterine Segment Operations". All lectures were beautifully illustrated and greatly appreciated by all present.

During the year Dr. Theile gave evidence before the Royal Commission on National Insurance.

In September the Maryborough Hospitals Board opened a new block of private wards and operating theatre. The President attended and spoke on behalf of the local association.

We look forward to a continuance of clinical meetings and further lectures from Brisbane men.

E. THEILE,  
President.  
O. E. NOTHLING,  
Honorary Secretary.

#### *Gympie Local Association.*

No meeting of the North Coast Local Association has been held this year. It is proposed to hold one after the report of the Royal Commission on National Health Insurance has been published.

GARTH MAY,  
Honorary Secretary.

#### *Mackay Local Medical Association.*

The inaugural meeting of the above association was held in September, 1938, when the following office-bearers were elected: *President*, Dr. C. E. Williams; *Vice-President*, Dr. E. W. Chenoweth; *Honorary Secretary*, Dr. P. W. Hopkins. Various matters in connexion with national health insurance were discussed.

It is the intention of the local association to hold clinical meetings.

PAUL HOPKINS,  
Honorary Secretary.

#### *Queensland Post-Graduate Committee.*

##### *Annual Report, 1937-1938.*

*Personnel of Committee.*—Chairman, Dr. S. F. McDonald; Vice-Chairman, Dr. A. V. Meehan; Honorary Secretary-Treasurer, Dr. Horace W. Johnson; Dr. Alex. Murphy, Dr. E. S. Meyers, Dr. Neville G. Sutton, Dr. N. W. Markwell, Dr. Ellis Murphy, Dr. L. M. McKillop, Dr. P. A. Earnshaw, Dr. J. R. S. Laha, Dr. G. A. McLean, Dr. C. E. Wassell, Dr. J. V. Duhig, Dr. L. W. N. Gibson, Dr. E. O. Marks, Dr. Alan E. Lee, Dr. J. F. Dunkley, Professor H. J. Wilkinson, Professor D. H. K. Lee.

*Meetings.*—Eleven meetings and one special meeting of the committee were held during the year.

*Honorary Secretary.*—In January Dr. N. L. Sherwood was appointed Honorary Secretary when Dr. H. W. Johnson resigned to accept the position of Honorary Secretary of the British Medical Association.

We regret to record the death of Dr. L. W. N. Gibson, which took place in December. Dr. Gibson was formerly Honorary Secretary and a member of the committee for some years.

*Week-end Course.*—A week-end course was arranged to be held on Saturday, November 6, and Sunday, November 7. The visiting lecturer was Dr. John Horan, who gave an excellent lecture-demonstration on the "Flexible Gastroscope".



**Annual Post-Graduate Course.**—This year's course was held from May 27 to June 3, 1938. The membership numbered 78, including nine from the country. Visiting lecturers were Dr. Robert Fowler, Dr. F. V. G. Scholes and Dr. Charles Kellaway. The latter also delivered the Joseph Bancroft Memorial Lecture. The lectures, lectures, demonstrations and clinics were of a very high standard and were attended by large and appreciative audiences. The shorter ten days' course and the arrangement of demonstrations as requested were much appreciated by members attending the course.

The printing of the programme of the course was arranged by Mr. S. N. Cobbold, of the British Medical Agency of Queensland, Proprietary, Limited, and was very satisfactory.

The dance held on June 1 was very enjoyable, and the Honorary Secretary, Dr. Noel M. Gutteridge, is to be congratulated upon the success of the function. Representatives of several other professional organizations were invited as official guests.

**Local Associations.**—Lectures were arranged for the Downs and South Western Local Medical Association and various lecturers visited Toowoomba, Kingaroy, Gympie and Wondal.

**General.**—The poliomyelitis film has been shown at Nambour, Gympie, Mackay, Cairns, Maryborough, Gladstone and Lismore, to the Australian Orthopaedic Association, Sydney, and to the Central Queensland Crippled Children's Association at Rockhampton. Arrangements were also made for it to be shown to the Australasian Massage Association and other interested persons, including the Minister for Health and Home Affairs and the Director-General of Health, at the Tivoli Theatre, Brisbane.

Dr. N. W. Markwell presented a set of slides of the American Heart Association on Electrocardiograms.

**Finance.**—It will be noted from the balance sheet that there is a credit of £241 11s. 9d. in the Commonwealth Savings Bank. This year's course resulted in a credit balance of £29.

#### The Joseph Bancroft Memorial Lecture.

The 1938 lecture was delivered by Dr. Charles H. Kellaway, at the Macgregor School of Physiology of the University of Queensland, on June 3, the subject being "Cellular Response to Injury". Representatives of the Board of Faculties of the University of Queensland and of the Royal Society were invited, and there was an attendance of over sixty members of the Branch. A number of fourth-year medical students were also present.

At the conclusion of the lecture the President presented the Joseph Bancroft Memorial Medal to Dr. Kellaway in honour of the occasion.

#### The Jackson Lecture.

Dr. A. Jefferis Turner, who was a contemporary of the late Dr. E. Sandford Jackson, delivered the Jackson Lecture on August 5, 1938. The title of the lecture was "Experiences in Preventive Medicine". Unfortunately the death of Dr. Jackson occurred on June 26, 1938, prior to the delivery of the lecture. The Jackson Lecture will now serve as a memorial to one of the pioneers of medicine in Queensland, who was particularly interested in the subject of medical history.

#### The Dr. L. W. N. Gibson Fund.

As a mark of appreciation of the services of our late Honorary Secretary, Dr. L. W. N. Gibson, whose death occurred on December 23, 1937, members of the Branch and friends contributed to a fund to assist in the education of his two children. The fund amounted to £372 11s. 4d., and this sum has been sent to Mrs. Gibson, who has returned to England. The money has been invested by Mrs. Gibson in the names of the children, and the income from it will be used for their education.

#### The University of Queensland

##### Appointment to the Senate.

Dr. Eustace Russell has been elected to the Senate of the University of Queensland in place of the late Dr. W. N. Robertson, who was a Senator for many years and who also occupied the position of Vice-Chancellor.

##### The Dr. William Nathaniel Robertson Medal.

The amount of over £200 which was subscribed by members of the Branch in appreciation of the late Dr. W. N. Robertson has been handed over to the University of Queensland. The fund is to be used to provide a medal to be awarded annually to the most successful candidate at the final medical examination. The balance of the fund has been invested and a monetary prize will be given, in addition to the medal, when the accumulated interest amounts to at least £10 per annum. This will serve to perpetuate the name of one of the most esteemed members of the Branch.

##### British Medical Association Medical Students' Loan Fund.

In 1930, after the approval of the Branch Council had been given, an appeal was circulated by Dr. C. A. Thelander for assistance to a medical student in financial need. A total sum of £92 9s. 6d. was collected by the end of that year. As it was insufficient for the purpose it was supplemented by Dr. Thelander, until the sum of £160 was advanced to the student on the undertaking that it was to be returned as soon as conveniently possible, when it would form the nucleus of a fund to be applied similarly, at the discretion of the Council of the Branch. Repayment of this loan has now begun, and the further handling of the money has been placed in the hands of the Branch Council. It is expected that sufficient money will be available in about twelve months' time to establish a British Medical Association Medical Students' Loan Fund. The President, Honorary Secretary and Honorary Treasurer will be the trustees and a committee of administration will be appointed.

##### The Medical School.

The new medical school, which has been erected alongside the Brisbane Hospital, is almost completed, and it will be occupied from the beginning of next year.

##### British Medical Agency of Queensland, Proprietary, Limited, and Queensland Medical Finance, Proprietary, Limited.

The British Medical Agency of Queensland, Proprietary, Limited, is in a satisfactory position, having shown a profit on the year's undertakings. Apart from the purely business aspect, it has fully justified its existence in rendering valuable services to members, particularly to those residing in the country. The venture was started to provide a service to members, and it was made possible by capital subscribed entirely by the British Medical Association (Queensland Branch), and all the shares are held by the Branch. Support of the agency, therefore, makes possible the extension of the service to members.

An offshoot of the agency is the Queensland Medical Finance, Proprietary, Limited, which has recently been established under the guarantee of twenty members of the Branch. The main object is this company is to assist selected young medical practitioners to settle in practice in the State.

The Council would like to record its appreciation of the services of Mr. S. N. Cobbold, who is the manager and secretary respectively of the companies.

##### Federal Council.

One meeting of the Federal Council was held at Melbourne in February, 1938, and two special meetings have been held since that date. Dr. T. A. Price and Dr. D. Gifford Croll represented the Branch at these meetings. Dr. T. A. Price has been appointed the Queensland representative on the Executive Committee of the Federal Council.

**Statement of Receipts and Payments (General Fund) for Twelve Months ended November 15, 1938.**

Prior to the Bancroft Lecture on June 3, the President and members of the Council entertained at dinner at the

## QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Balance Sheet as at November 15, 1938.

LIABILITIES.		ASSETS.	
	£ s. d.		£ s. d.
British Medical Association, London—		Freehold Property, British Medical Association House, 225, Wickham Terrace, Brisbane ( <i>less</i> Depreciation on Building to November 15, 1938) . . . . .	2,830 0 0
Balance, Subscriptions Account . . . . .	41 8 9	British Medical Association Rooms, Wickham Terrace, Brisbane—Library, Bookcases, Furniture, Lantern, Typewriters <i>et cetera</i> . . . . .	302 5 0
Australasian Medical Publishing Company, Limited, Sydney . . . . .	32 15 0	Museum Specimens . . . . .	5 0 0
English, Scottish and Australian Bank, Limited, Brisbane—		Queensland Medical Land Investment Company, Limited—	
Overdraft, Building Fund Account . . . . .	1,439 6 11	5,950 Shares of £1 each, paid to 10s. each, at cost . . . . .	2,975 0 0
Loan from Queensland Medical Land Investment Company, Limited . . . . .	1,900 0 0	British Medical Agency of Queensland, Proprietary, Limited—	
Loans from Members repayable		257 Shares of £1 each, fully paid, at cost . . . . .	257 0 0
May 15, 1943 . . . . .	£3,047 10 0	Rent for year . . . . .	143 0 0
Interest accrued to November 15, 1938 . . . . .	74 11 7	Australasian Medical Publishing Company, Limited, Sydney—	
	3,122 1 7	Two debentures of £25 each and one of £5 . . . . .	55 0 0
Reserve—		Sinking Fund Investments—	
Dinners, Entertainments <i>et cetera</i> . . . . .	31 17 2	Australian Consolidated Incorporated Stock—3½%, 1951, £280, at cost . . . . .	278 3 3
Sinking Fund . . . . .	309 11 3	Commonwealth Savings Bank, Brisbane—Credit	
Accumulation Account—		Balance, Current Account . . . . .	31 8 0
Balance at November 16, 1937 £1,425 4 3			309 11 3
Add Surplus of Income over Expenditure 12 months ended November 15, 1938 . . . . .	505 18 7	City Electric Light Company, Limited—	
	1,931 2 10	Deposit Account . . . . .	6 0 0
		English, Scottish and Australian Bank, Limited, Brisbane—	
		Credit Balance, General Fund Account . . . . .	1,913 18 3
		Cash in Hand . . . . .	11 9 0
			£3,808 3 6
	£3,808 3 6		

We have examined the above Balance Sheet and have obtained all the information and explanations we have required.

In our opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Association's affairs as at November 15, 1938, according to the best of our information and the explanations given us, and as shown by the books of the Association.

R. G. GROOM & Co.,  
Chartered Accountants (Aust.),  
Auditors.

Brisbane,  
November 22, 1938.

(Signed) M. GRAHAM SUTTON,  
Honorary Treasurer.

## QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Building Fund Statement of Receipts and Payments for Twelve Months ended November 15, 1938.

RECEIPTS.		PAYMENTS.	
	£ s. d.		£ s. d.
November 15, 1938.		November 16, 1937.	
To Rent from British Medical Association House, Wickham Terrace . . . . .	11 0 0	By English, Scottish and Australian Bank, Limited, Brisbane—Debit Balance . . . . .	1,319 7 1
„ Queensland Medical Land Investment Company, Limited, Dividend, 12 months ended November 25, 1937 . . . . .	143 15 0	November 15, 1938.	
„ English, Scottish and Australian Bank, Limited, Brisbane—Debit Balance . . . . .	1,439 6 11	By Rates, Land Tax and Insurance—	
		“British Medical Association House”, Wickham Terrace . . . . .	122 0 0
		„ Payments on account of interest . . . . .	152 4 10
		„ Bank Charges . . . . .	0 10 0
	£1,594 1 11		£1,594 1 11



## QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Revenue Account for Twelve Months ended November 15, 1938.

EXPENDITURE.			
November 15, 1938.			
	£ s. d.	£ s. d.	
To Library Expenditure .. ..	44 3 3		
" Branch Expenses .. ..	627 4 0		
" Federal Council, Contribution to General Expenses .. ..	52 0 0		
" Depreciation on Furniture, Bookcases, Fittings, Typewriters <i>et cetera</i> .. ..	17 0 0		
" Expenses, British Medical Association House—		740 7 3	
Rates, Land Tax, Insurance, Painting, Repairs, and Sundries .. ..	128 17 0		
Cleaning .. ..	80 12 2		
Interest on Loans from Members .. ..	152 7 6		
Depreciation, Building .. ..	70 0 0		
	2431 16 8		
Less Rents received .. ..	190 3 0		
		241 13 8	
" Accumulation Account—Profit for Year transferred .. ..		505 18 7	
		£1,487 19 6	

INCOME.			
November 15, 1938.			
	£ s. d.	£ s. d.	
By Branch and Organization Fund			
Subscriptions .. ..	1,286 16 3		
" Queensland Medical Land Investment Company, Limited—			
Dividend .. ..	142 10 0		
" Australasian Medical Publishing Company, Limited—			
Interest on Debentures .. ..	2 15 0		
" Sundries .. ..	5 18 3		
		1,437 19 6	
" Dr. W. N. Robertson (deceased)—			
Donation of 100 Shares of £1 each, paid to 10s. each, in Queensland Medical Land Investment Company, Limited .. ..		50 0 0	
		£1,487 19 6	

Belle Vue Hotel Dr. Charles H. Kellaway, Dr. F. V. G. Scholes, Dr. Robert Fowler, Dr. N. L. Sherwood, Dr. Alex. Murphy and Professor J. V. Duhig.

The medical bowlers were successful for the third time in winning the cup presented by Messrs. Bosch, Barthel and Company, in competition with the dental and pharmaceutical professions.

## Appreciation.

The Council desires to place on record its appreciation of the services of the Secretary, Mrs. M. Spooner, and of the staff in a year made extremely strenuous by the contemplated national health insurance.

(Signed) R. G. QUINN,  
President.

## ELECTION OF OFFICE-BEARERS.

The President announced the result of the election of office-bearers and members of the Council:

*President:* Dr. Neville G. Sutton.

*President-Elect:* Dr. C. E. Wassell.

*Past-President:* Dr. R. G. Quinn.

*Honorary Secretary:* Dr. Horace W. Johnson.

*Councillors:* Dr. D. Gifford Croll, Dr. Leonard H. Foote, Dr. Basil L. Hart, Dr. H. W. Horn, Dr. F. W. R. Lukin, Dr. S. F. McDonald, Dr. H. S. McLelland, Dr. Alfred Eric Mason, Dr. Mervyn S. Patterson, Dr. T. A. Price, Dr. W. J. Saxton, Dr. J. L. Selwood, Dr. J. G. Wagner, Dr. L. P. Winterbotham.

On the motion of Dr. R. G. Quinn, seconded by Dr. N. G. Sutton, Mr. Roy G. Groom was appointed auditor.

## ETHICS COMMITTEE.

On the motion of Dr. L. H. Foote, seconded by Dr. D. Gifford Croll, Dr. A. H. Marks, Dr. G. P. Dixon, Dr. Gavin Cameron, Dr. G. W. Macartney and Dr. M. Graham Sutton were appointed as members of the Ethics Committee.

## INDUCTION OF PRESIDENT.

Dr. R. G. Quinn then inducted Dr. Neville G. Sutton to the chair. Dr. Quinn referred to Dr. Sutton's ability

and interest in his profession, also to his position as lecturer in surgery at the Medical School of the University of Queensland.

## PRESIDENT'S ADDRESS.

Dr. Neville G. Sutton then read his address (see page 1).

## VOTES OF THANKS.

Dr. S. F. McDonald moved a vote of thanks to Dr. Neville G. Sutton, which was carried by acclamation.

Dr. Kenneth Wilson moved a vote of thanks to the members of the Council, who had finished an arduous year's work, and to Mrs. Spooner, the lay secretary, for her work during the year.

## SCHOLARSHIPS AND GRANTS IN AID OF SCIENTIFIC RESEARCH.

We would draw our readers' attention to the following notice relating to scholarships and grants provided by the British Medical Association.

## Scholarships.

The Council of the British Medical Association is prepared to receive applications for research scholarships as follows:

1. An Ernest Hart Memorial Scholarship, of the value of £200 per annum.
2. A Walter Dixon Scholarship, of the value of £200 per annum.
3. Three research scholarships, each of the value of £150 per annum.

These scholarships are given to candidates whom the Science Committee of the Association recommends as qualified to undertake research in any subject (including state medicine) relating to the causation, prevention or treatment of disease.

Each scholarship is tenable for one year, commencing on October 1, 1939. A scholar may be reappointed for not more than two additional terms. A scholar is not necessarily required to devote the whole of his or her time to the work of research, but may hold a junior appointment at a university, medical school or hospital, provided the duties of such appointment do not interfere with his or her work as a scholar.

#### Grants.

The Council of the British Medical Association is also prepared to receive applications for grants for the assistance of research into the causation, treatment or prevention of disease. Preference will be given, other things being equal, to members of the medical profession and to applicants who propose as subjects of investigation problems directly related to practical medicine.

#### Conditions of Award: Applications.

A copy of the regulations relative to the award of the scholarships and grants for 1939 and of the prescribed application form can be obtained on application to the General Secretary of the Federal Council of the British Medical Association in Australia, British Medical Association House, 135, Macquarie Street, Sydney. The completed application form is required to be submitted to the Secretary of the Federal Council not later than March 1, 1939.

Applicants are required to furnish the names of three referees who are competent to speak as to their capacity for the research contemplated.

G. C. ANDERSON,  
Secretary.

British Medical Association House,  
Tavistock Square,  
London, W.C.1.  
October, 1938.

#### NOMINATIONS AND ELECTIONS.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Webber, Howard Mansfield, M.B., B.S., 1938 (Univ. Sydney), 27, Woodlands Road, Lindfield.  
Alexander, Samuel James, L.M.S.S.A. London, 1925, 285, Malabar Road, Maroubra Bay.

The undermentioned has applied for election as a member of the South Australian Branch of the British Medical Association:

Wilson, Robert Kevin, M.B., B.S., 1937 (Univ. Adelaide), Renmark Avenue, Renmark.

### Medical Practice.

#### MEDICAL SERVICES IN COUNTRY DISTRICTS IN VICTORIA.<sup>1</sup>

At the outset, it should be mentioned that the genesis of the establishment of the subcommittee responsible for this report lay in statements in Parliament and the Press alleging that there was a shortage of doctors in the country districts of Victoria, that graduates of our own University were unwilling to practise in the country, and suggesting that it would therefore be unreasonable and unwise to raise any barrier against the entry of foreign doctors by

amending the *Medical Act* to make the conditions under which they might be registered in this State more stringent. The fundamental question "Is there a shortage of doctors?" must therefore be considered.

Statistics show that the ratio of doctors to population is higher in Victoria than in any of the other States of the Commonwealth and comparable with the ratio in other countries. Figures relating to population growth reveal a striking decrease in the yearly growth of population from a maximum of 29,845 in the year 1926-1927 to a minimum of 5,609 in the year 1934-1935, rising to 7,894 in the year 1936-1937.

The average annual number of graduates from the Medical School of the University of Melbourne has, over the last thirty-seven years, been 60.8, and this year 91 students are sitting for their final examinations, the total number of medical students (all years) being 673.

An estimate gives the average annual death rate of medical practitioners as 15.65, and an estimate of the number of graduates (57.65) which can be absorbed annually has been made. Two factors, however, are apt to reduce this last figure considerably: (i) A slowing down of population increase. (ii) The establishment of medical schools in other States. In the past, Melbourne graduates have largely filled the demand for doctors in other States, notably in Queensland, Tasmania and Western Australia; but the future demand from all these States will lessen. Queensland has established its own medical school, a development which must be followed before many years in Western Australia, and the population of Tasmania is practically static.

It is reasonable actually to forecast that in a very few years the medical profession will be overcrowded rather than under-supplied, and within the next few years there will be the same difficulty in placing graduates in medicine as at present exists in at least one other profession. In our opinion, therefore, there is no shortage of doctors, and one need not be anticipated.

Are there faults in the distribution of doctors? Under existing conditions of society, a doctor, in common with members of other professions not under State control, is a free agent faced with the economic problem of earning a living and providing for the needs of his family and his old age. After a long and arduous course of training, followed by a period of low-paid service as a resident medical officer, a medical graduate is at least twenty-seven or twenty-eight years of age before he commences to earn a living, and an average professional life of more than thirty years cannot be expected. The majority of graduates still enter general practice; but in recent years more and more of them spend several years in post-graduate work and obtain higher degrees, very often proceeding abroad for that purpose, before settling into practice. Such men, and rightly so, expect a higher reward in view of their increased outlay and older age before they commence to earn. The small country town therefore does not appeal to them, and they remain in capital cities or large provincial centres, where there is more scope for the exercise of special skill and knowledge, and where hospital facilities are superior.

More, too, is expected by patients than formerly, as the practice of medicine has been altering, and it is only in the large centres that a full range of modern diagnostic equipment can be installed.

A fundamental change is occurring in other aspects of rural life. It is undeniable that, with the development of good roads and motor cars, the small towns are being overwhelmed by the large centres within a radius of thirty to fifty miles. People who formerly obtained their medical services and household supplies in small towns within a short distance of their homes, now think nothing of a drive of many miles to a larger town, where they do their shopping and attend their doctor. In former times, when horse transport was used and roads were not of present-day standard and the extensive telephone system of today had not been established, patients accepted attendance by the local medical practitioner, and there was enough work to provide a reasonable living. Quite a substantial portion of a doctor's income in those days was derived from mileage fees; but the amount of travelling outside town

<sup>1</sup> A report prepared by a special subcommittee of the Council of the Victorian Branch of the British Medical Association.



areas is now negligible, and it is the universal experience of country doctors that patients, if ambulatory, visit their surgeries, or, if ill enough to require nursing, enter hospital.

If districts wish to retain medical practitioners, the residents must continue to be satisfied with local men and accept and pay for their services; otherwise the practitioners will be forced to abandon their practices. That has already happened in several areas, Woomelang, Ultima and Branholme, for example, while in other centres the number of doctors has been reduced. Ouyen, for example, which ten years ago had three doctors, now has only one.

Apart from the social and professional amenities of the cities and larger towns, life in a small country town has other disabilities. The isolated doctor is faced with greater individual responsibility for the welfare of his patients, and as his family grows up additional problems arise in regard to the education and employment of children. Further, the difficulty of obtaining domestic help entails greater sacrifice on the part of wives in medical practitioners' homes than in other classes, as telephones and doorbells have to be attended, and in many isolated practices the doctor's wife assists him by sterilizing instruments and performing similar types of work.

Population decline in certain areas has had a marked influence on the income of many country doctors. This is noticeable in worked-out mining towns and some of the closer-settlement areas. The activities of the Closer Settlement Commission, while stabilizing conditions in certain areas by granting larger holdings and compensating dispossessed settlers, have resulted in reduction of population, particularly in some of the Mallee districts.

At the instigation of the British Medical Association, a few years ago, the Closer Settlement Commission, at a time when most Mallee settlers were under lien to it, made doctors preferred creditors and guaranteed payment of accounts up to £10. As a result, certain practices were enabled to carry on; but now that the system has been abolished, and in the face of existing drought conditions, it is likely that economic stress will lead to the abandonment of further practices. An additional attraction to country people to seek their medical and other services in the larger towns has been the growth and development of base hospitals in pursuance of Government policy as implemented by the Charities Board. By propaganda of base hospital committees, country residents have been led to believe that the best attention is obtainable only in such hospitals, and that they are open to all. Strict assessment of patients has been in some cases noticeably lacking, and people seek to enter the public beds of such hospitals as a right and not as recipients of charity. In this regard the public can hardly be blamed, as the *Hospitals and Charities Act* empowers hospital committees to claim up to the cost of maintenance from those seeking relief. It should be noted, however, that although some patients in public wards may pay a considerable amount per week, no portion of that amount is paid to the attending honorary doctor. Further, base hospitals with private and intermediate accommodation provide an added inducement for patients to leave the isolated doctor and seek attention in those institutions. The recent pronouncement of the Charities Board, too, that members of base hospital staffs must hold higher degrees means that younger medical men, particularly those who are ambitious, will not be content, after obtaining such special qualifications, to commence practice in small towns. They will gravitate to the larger towns in the hope of obtaining staff appointments.

The problem of medical service in isolated areas is not confined to Victoria, and in other States the following provisions have been made.

**Queensland:** Many small country hospitals are practically financed by the Government, and a doctor is appointed to reside at and attend patients in the hospital, usually at a salary of £400 to £500 *per annum*, with the right of private practice.

**New South Wales:** The Government, in the case of some eight to ten small towns, subsidizes doctors to the extent of £600 *per annum*, giving them the right of private practice, with the proviso that the subsidy is reduced if the

total income of the medical practitioner exceeds £750 *per annum* or thereabouts. Proper books have to be kept, and they are audited regularly. The system has not been very successful, as on account of the low remuneration offered, only older practitioners or those desirous of an easy life will accept the appointments.

**Western Australia:** In five isolated areas (Broome, Derby, Port Hedland, Roeburne and Wyndham) medical officers are appointed by the Department of Health to the combined position of doctor and magistrate. Salaries of £1,000 *per annum* are paid, the medical officer, where possible, collecting scheduled fees for his services, such fees being paid to the Government. In other parts of the State, doctors are encouraged to settle in sparsely populated districts under a guarantee, which is made to them by the Government, of £600 for the first year, and if the services given by the doctor are satisfactory, that guarantee may be extended for a further period. Difficulty has been experienced, however, in obtaining men willing to accept the terms offered.

**Tasmania:** In Tasmania, six or seven districts have medical men paid by the Government, and we understand that the provision of similar condition in other districts is contemplated. Salaries up to £750 *per annum* are paid, with an allowance of £50 *per annum* for rent, and 6d. *per mile* for motor-car expenses. The doctor works from 8 a.m. to 7 p.m. on five days in the week, and till 1 p.m. on Saturday, and gives free advice during those hours. After hours—on Saturday afternoons and Sundays—he charges fees to be paid by patients. He also charges for operations other than minor operations, the fees remaining the property of the doctor. He is given one month's holiday yearly with pay, with *locum tenens* provided by the Government, and at arranged times gets a further month's leave to do post-graduate study.

We arrive, then, at the following position: Are there, in reality, any areas in Victoria suffering from the lack of a resident doctor? To determine the answer it is necessary that a survey be made of the State and a decision arrived at as to the areas in which it is essential there should be a resident medical practitioner. Such a decision should be reached without regard to political or other influences and be based solely on the needs of the community. As a working basis we suggest that if an area containing a population of not less than 200 families has no medical service and the centre of the area is 30 miles distant from one or more practising doctors, then steps should be taken to supply one. The following possible methods are suggested:

1. Payment of a subsidy by the local municipal authority, which is the authority charged with the care of the health of the people, and which at present provides for the care of infectious diseases and pays half the cost of treatment. Such a subsidy could be paid in the form of a substantial salary to a medical practitioner appointed as medical officer of health for the shire or one of its ridings.

2. By Government subsidy. At present only the State could pay such a subsidy; but if the *National Health and Pensions Insurance Act* comes into operation, the National Insurance Commissioners have power to subsidize districts which would otherwise be without medical services, or, in extreme cases, to place salaried medical officers in such districts.

3. The establishment of a medical contributory scheme by residents of a district. In return for a family contribution of about £3 3s. *per annum*, the doctor would give general physician service to contributors, surgery and midwifery being outside the scope of his contract. Such a scheme has operated fairly successfully at Werrimull for over two years; but usually the number of subscribers under such a scheme gradually falls off. Possibly a Government subsidy to such a scheme on a pound-for-pound basis would ensure its success. We do not consider that the scheme suggested should be under friendly society control on account of the reluctance of such societies to pay more than minimum rates—usually 25s. *per annum*. In fact, the existence of lodges at such low rates imperils the continuance of medical services in some districts, as although one hundred lodge members do not have a material effect on the income of a city practice, a similar number with their dependants, in a



country practice, may represent half the population of the area.

4. Where a hospital exists the appointment of a salaried medical superintendent, with the right of private practice, is a possible solution. Free service would be available to the indigent, but the salary would have to be fully guaranteed for a definite term by some responsible authority, such as the Government, through the Charities Board of Victoria. If the hospital concerned was not one coming within the scope of the *Hospitals and Charities Act*, steps could be taken to bring it within that scope and so under the control of the Charities Board. Such a move would be advantageous, as small hospitals would not be established or maintained in districts incapable of supporting them, and a proper system of hospital planning, a definite need in this State, might result.

Whichever one of the above alternatives responsible authorities might see fit to support, we suggest that the following principles should be adhered to:

1. The payment of a subsidy with the granting of the right of private practice to the doctor.

2. The residents of the district concerned should be held responsible for a fair share of the cost of maintaining a doctor. It has not been the policy of the British Medical Association to encourage a free service by medical men paid by Government, and the establishment of such a system, even in an isolated area, would lead to demands for its extension, with the final result of nationalisation of the profession and the wrecking of the present not unsatisfactory system of medical practice.

3. The guaranteed income should be sufficient to meet fully the overhead costs of conducting a practice, as the magnitude of those costs is usually not appreciated. Extensive investigations have recently been made into medical practices of all types throughout Australia, and it can be affirmed that a minimum of £500 *per annum* is required to meet the overhead costs of a general practice, including rent, car maintenance, domestic help, telephone, lighting, fuel, depreciation on equipment, and salary of a *locum tenens* during essential holiday periods.

Five hundred pounds, then, should be the minimum guaranteed, and as we suggest that only large scattered districts with a reasonably well equipped hospital should be assisted, it is essential that the medical practitioner appointed should be competent. Such a man will not be attracted unless there is a good prospect of earning an additional £500 or more *per annum*, giving an expectation of an annual gross income of at least £1,000. Should there not be a prospect of earning such an additional amount, the subsidy (in whatever form) should be increased.

4. Security of tenure must be offered to the doctor.

#### Epitome.

There is no shortage of medical practitioners in Victoria, and in three or four years the profession will be overcrowded.

The difficulty, in a few centres, of obtaining medical practitioners is due to the impossibility of making a living in districts: (a) with diminishing populations; (b) subject to seasonal distress; (c) in competition with better-equipped neighbouring large towns.

Proposed remedies are:

1. Survey of districts and decision as to where it is necessary to have medical practitioners.

2. In districts where a medical practitioner is obviously necessary, financial provision to be made: (a) by the local authority in the form of a high salary to a medical officer of health; or (b) by Government subsidy, State or Federal; or (c) by establishment of a subsidized local contract system of medical service; or (d) by appointment of a salaried medical superintendent to a hospital, with the right of private practice.

The Council of the Victorian Branch of the British Medical Association assures those concerned of its deep interest in the subject and offers them the fullest help in providing medical attendance in centres where a resident doctor is essential to the welfare of the community, and the experience and knowledge of this body and of all the officers of the Association will be at any time at the disposal of the Government or its nominee.

## The Royal Australasian College of Physicians.

### MEETING OF THE COUNCIL.

The Council of the Royal Australasian College of Physicians met on December 13, 1938, Sir Charles Blackburn, the President, in the chair. Apologies were received from Dr. C. T. Champion de Crespigny, Vice-President, Dr. F. S. Hone, and Dr. C. H. Kellaway. The President asked the Councillors to remain standing for a minute as a tribute to the memory of the late Dr. Eustace Russell of Brisbane, whose recent sudden death had deprived the Council of a most valued and respected member.

The successful candidates at the recent examination for membership of the college were admitted by the President. The President, Vice-Presidents, the Honorary Secretary and the Honorary Treasurer, duly robed, together with the other councillors, received the new members, who were introduced by the Censor-in-Chief and were admitted after assenting to the Pledge of Membership, which is as follows:

You promise and declare that you will observe and obey the Articles of Association and regulations of the College, and that, if for any reason you cease to be a member, you will surrender your certificate of membership. You give your faith that you will do all in your power to further the honour of the college and the ethical ideals of your profession.

Members admitted in person were: Dr. J. F. Akeroyd, Dr. Phyllis M. Anderson, Dr. C. G. Bayliss, Dr. S. G. Bradfield, Dr. T. C. Butler, Dr. R. R. Bye, Dr. I. T. Cameron, Dr. N. C. Cunningham, Dr. M. C. Davis, Dr. N. L. Dodd, Dr. L. Holland, Dr. J. B. McMiken, Dr. I. S. Magarey, Dr. J. T. Paton, Dr. H. M. Rennie, Dr. C. W. Ross, Dr. B. A. Serjeant, Dr. B. T. Shallard, Dr. R. Southby, Dr. S. E. L. Stening, Dr. D. G. Vickery, Dr. C. Yeatman.

The following members, being unable to be present in person, were admitted *in absentia*: Dr. D. Y. Allan, Dr. J. S. Bothroyd, Dr. H. G. D. Breidahl, Dr. M. E. Chinner, Dr. R. G. Champion de Crespigny, Dr. G. V. Davies, Dr. C. Fortune, Dr. G. R. Kirk, Dr. E. Kiraner, Dr. M. McGeorge, Dr. W. J. R. Mabin, Dr. A. J. May, Dr. G. B. V. Murphy, Dr. K. F. O'Donnell, Dr. L. E. Rothstadt, Dr. C. B. Sangster, Dr. E. Spargo, Dr. F. M. Spencer, Dr. Marion B. Wanliss.

## Post-Graduate Work.

### THE NEW SOUTH WALES POST-GRADUATE COMMITTEE IN MEDICINE.

ARRANGEMENTS have been made by the New South Wales Post-Graduate Committee in Medicine for Dr. H. E. Robertson, of the Mayo Clinic, Rochester, Minnesota, to deliver two lectures in Sydney, as under:

Friday, January 13, 1939, at 4.30 p.m., at the Robert H. Todd Assembly Hall, 135, Macquarie Street: "So-called Cirrhosis of the Liver."

Monday, January 16, 1939, at 4.15 p.m., at the Prince Henry Hospital: "The Pathology and Complications of Peptic Ulcer."

Admission to these lectures will be by ticket, which may be obtained from the Secretary, New South Wales Post-Graduate Committee in Medicine, The University of Sydney, Sydney. The fee will be 5s., and the bearer of a ticket will be admitted to either or both of the lectures.

## Correspondence.

## THE CULTURAL TESTS OF WARD AND RUDD.

SIR: I should like an opportunity of replying to the criticism by Dr. E. V. Keogh of my article "The Value of Ward and Rudd's Cultural Test for the Differentiation of Group A Hemolytic Streptococci", and of correcting his incomplete statement as to my conclusion.

In regard to Dr. Keogh's suggestion that I was under a misapprehension of the function of the test, I would like to requote Ward and Rudd's first conclusion, which was as follows: "If hemolytic streptococci from human sources are grown in two media, (a) serum broth, (b) serum peptone with just sufficient agar to suspend the developing colonies, the potentially pathogenic group A (Lancefield) strains with very few exceptions can be differentiated by their growth characteristics from hemolytic streptococci belonging to the other serological groups." Also I would point out that the title of my article did, I think, make it clear that I was concerned only with the validity of the above conclusion.

Dr. Keogh suggests that my dissatisfaction with the method of Ward and Rudd is in part due to the "use of a comparatively small collection of streptococci, many of vaginal origin". Of the 111 strains I dealt with in my article only 40 were from vaginal cultures, and of the 12 non-group-A strains, which with Ward and Rudd's test were indistinguishable from members of group A, only five were of vaginal origin. Since that time I have tested an additional 43 freshly isolated strains from human sources. According to Lancefield's precipitin test, 15 of these new strains did not belong to group A, yet of these 15, seven behaved in the way described by Ward and Rudd as typical of strains belonging to group A. The suggestion that my results may be due to the media employed may be correct, but the media I used were prepared in strict accordance with the directions published by Ward and Rudd in June, 1935.

Dr. Keogh states that I concluded that Ward and Rudd's cultural test "cannot replace Lancefield's precipitin test", and that no such claim was made by Ward and Rudd. This statement regarding my conclusion is incorrect; my conclusion was that the biological test suggested by Ward and Rudd could not be used to replace the precipitin test for the differentiation of group A hemolytic streptococci. As to Ward and Rudd's claim, I have already quoted their conclusion relative to this point.

On reading Dr. Keogh's letter, I am left with the impression that he considers my article to be a criticism of the whole of Ward and Rudd's publication; if he will reread my article he will find that I was concerned only with the claim of these authors that their suggested cultural test enabled potentially pathogenic group A hemolytic streptococci, with very few exceptions, to be differentiated from hemolytic streptococci belonging to the other serological groups, and that the test was therefore especially suited for busy hospital laboratories. As to the use of this new test in a research laboratory I made no comment.

In his letter Dr. Keogh admits to adopting and now using a modification of the medium suggested by Ward and Rudd. Surely this indicates that he also found that the test as put forward by these authors in June of this year was not entirely satisfactory.

Dr. Keogh considers it would be unfortunate if any bacteriologist were deterred by my criticism from adopting Ward and Rudd's cultural test, while I think that it would be even more unfortunate if any routine hospital laboratory were to adopt Ward and Rudd's cultural test as originally published by them, believing that by so doing they would be able to distinguish the group A strains from those of the other serological groups.

Dr. Keogh does not appear to regard the inclusion of non-group-A strains among the true group A strains as disadvantageous. With this I disagree. I would like to give one example from my own material, practically all of

which is derived from routine specimens from the Alfred and Women's Hospitals, Melbourne. Among the strains of hemolytic streptococci I studied there were four from cases of acute bacterial endocarditis. According to Ward and Rudd's cultural test, these four strains would be classified as group A; but according to the precipitin test, only one of these strains belonged to group A.

Since in no hospital, at least in this country, is there the opportunity to study many cases of this nature, our knowledge of what proportion of cases of acute streptococcal endocarditis are due to the various Lancefield groups will only be obtained by an analysis of the small groups of different observers. For this reason alone it is most important that no hospital should be using methods which will result in classifying as group A infections those really due to members of the other serological groups.

Yours, etc.,

HILDRED M. BUTLER.

Alfred Hospital,  
Commercial Road,  
Prahran, S.1,  
Melbourne,  
December 20, 1938.

SIR: In a recent issue of your journal, Miss H. Butler criticized a cultural test for group A hemolytic streptococci which we described in *The Australian Journal of Experimental Biology and Medical Science*, Volume XVI, at page 181. After further work on the test, we do not wish to modify the statement we made in that publication: "There is good correlation between the information afforded by this biological test and that afforded by Lancefield's serological test." Complete agreement was not, and is not, claimed. We are publishing a note in *The Australian Journal of Experimental Biology and Medical Science*, which we hope will be of assistance to Miss Butler and others in their interpretation of the test.

If, as we—and Dr. E. V. Keogh—think, this cultural test is sufficiently accurate to afford useful information in a routine laboratory, it will probably survive, unless and until a better test is devised. If, as Miss Butler thinks, the test is not accurate enough for this purpose, it will meet the fate it deserves and vanish from the scene.

Yours, etc.,

HUGH K. WARD.

G. V. RUDD.

The University of Sydney,  
December 29, 1938.

## IMMUNITY IN SYPHILIS.

SIR: Dr. Morris Roe argues from false premises. First of all McDonagh, whom he quotes, need not be taken seriously, as none of the theories of this highly imaginative writer have survived or been confirmed. Fournier, of course, is in an entirely different category; but much arsenic has flowed into veins since his day.

It is admitted almost universally today that if a patient is cured of syphilis he can be reinfectd. Instances of this nature have several times come within my own experience since the days of "Salvarsan", and hundreds of such instances have been reported from all parts of the world.

The fact of the matter is that in the days of treatment by mercury alone, only a very few patients were actually cured of syphilis; the vast majority merely had their disease driven into latency, and, therefore, still having the disease, could not be reinfectd. But with the advent of the much more powerful arsenical drugs this state of affairs was changed remarkably, with the above-mentioned result. Nor, as far as I know, is it admitted by any competent authority that yaws provides any immunity to syphilis, though it may be admitted as a possibility that the existence of yaws in a patient may prevent that



patient from being infected with syphilis until he is cured of yaws.

Dr. Roe seems to imagine that non-pathogenic spirochetes are to be found not infrequently in the circulating blood. As far as I know there is no evidence to support such an idea, and certainly no such event can be held to explain a persistent positive reaction to the Wassermann test.

Osmond, writing in "The Clinical Interpretation of Aids to Diagnosis", Volume I, 1930, (published by *The Lancet*, Limited) says: "In this country, where yaws is almost unknown, a consistently positive W.R. means that the patient is infected with syphilis, recent or remote." Possible explanations of false positive results are discussed; their incidence should not exceed 0.1%.

Kolmer ("Serum Diagnosis by Complement-Fixation", Lea and Febiger, Philadelphia, 1928) says that, apart from yaws, positive reactions are said to occur in relapsing fever. He concludes with the words: "At all events these diseases are not confusing factors in most parts of the world and almost not at all in the United States, which leaves the complement-fixation test practically specific for syphilis under acceptable technical conditions."

In view of these findings, Dr. Roe's contention that it is the presence of other spirochetes in the blood which confers immunity to infection from syphilis cannot be substantiated.

What may be the ultimate decision as to the significance of a consistently positive Wassermann reaction in "Wassermann-fast" sera is open to argument; but the phenomenon cannot be explained on the lines suggested by Dr. Roe.

I have discussed this matter with Dr. Tebbutt, who holds substantially the same opinion as that expressed in my letter.

Yours, etc.,

E. H. MOLESWORTH.

Beanbah,  
235, Macquarie Street,  
Sydney.

December 20, 1938.

#### GORDON CRAIG SCHOLARSHIPS.

SIR: It is obvious to me, from the number of inquiries received at the college, that the notification regarding the Gordon Craig Scholarships, which appeared in your issue of August 20, 1938, has been imperfectly understood by many prospective applicants. It therefore seems desirable that I should amplify and explain the information already published in your journal.

The Council of the Royal Australasian College of Surgeons proposes to devote approximately £2,100 *per annum* from the income of the Gordon Craig Bequest to encourage and foster surgical research and surgical education. It intends to allot this money in the form of grants to deserving applicants, who will be known as Gordon Craig Scholars. As many of these grants will be for a period of two or three years, it seems probable that a sum of £700 will be available for distribution in each year.

The council reserves the right to give the whole of this sum to one applicant, or, a *reductio ad absurdum*, to give £10 a year to each of seventy applicants. It also reserves the right to refrain from making any distribution in any particular year. It intends to retain complete freedom of action in regard to the disbursement of this money.

It is probable that, as other grants are available in Australia for research work, a large proportion of the money will be used to help able and deserving men to obtain a better surgical education.

The council, before awarding these grants, will give careful consideration to the claims of all applicants and will naturally be guided by their academic records, the reports received from their teachers, and their financial circumstances.

The only proviso is as follows:

Applicants for Gordon Craig Scholarships may be required, at the discretion of the council, to under-

take to proceed to the examination for the Fellowship of the Royal Australasian College of Surgeons upon the completion of the prescribed post-graduate training. Applicants for travelling scholarships must possess a senior surgical qualification recognized by the council.

The first grants will be made by the council at its meeting in September, 1939. Applications must reach this office before June 30, 1939. I suggest that all those graduates who wish to receive assistance in completing their education in surgery, or who wish to receive grants for research from the Gordon Craig Bequest, should apply in writing to the Secretary of the Royal Australasian College of Surgeons, Spring Street, Melbourne, before that date. It is unnecessary to add that it is desirable that each applicant should give the fullest information concerning his career and his needs. This information will naturally be regarded as confidential.

Yours, etc.,

ALAN NEWTON,  
Censor-in-Chief.

Royal Australasian College of Surgeons,  
Spring Street,  
Melbourne, C.I.  
December 23, 1938.

#### KERATOPLASTY.

SIR: Dr. Frank Claffy's clear statement on keratoplasty in your issue of December 17, 1938, should be read by all ophthalmic surgeons in Australia, and apparently also by the Minister for Health of New South Wales.

Although I have not had the opportunity of working under Mr. Tudor Thomas as Dr. Claffy has been fortunate enough to do, yet I was privileged to see in London last year the final result of some fifteen cases which had been operated on for opaque cornea by Mr. Thomas. I was frankly astounded by some of his results, and remember quite clearly at least two of these cases having  $\frac{1}{2}$  vision, and their optic disks being clearly visible through the graft. For this magnificent pioneer work alone, the name of Tudor Thomas will be handed down in ophthalmic history beside that of Gonin, Fuchs, and von Gräfe.

To condemn an operation because only a few obtain 100% results is quite farcical; and your readers must agree that any operation which will restore sight to a blinded person when all other means have failed is an operation which no thoughtful surgeon or laymen could possibly deride.

It was quite clear to me when examining Tudor Thomas's cases and discussing the technique with him that infinite skill and meticulous attention to detail are imperative for successful results. This was confirmed when I discussed the matter with Castroviejo, in New York, and examined his cases. It therefore appears to me that, if every ophthalmic surgeon in Australia attempts one or two isolated cases, the results are doomed to disappointment, and I feel sure that if this is clearly pointed out to them, they will be sufficiently magnanimous to ask surgeons experienced in keratoplasty to assist them with their first operations.

In conclusion, I must thank Dr. Claffy for bringing the matter to the attention of the readers of your journal.

Yours, etc.,

J. BRUCE HAMILTON.

174, Macquarie Street,  
Hobart,  
December 21, 1938.

SIR: *Re* letter of Dr. Frank Claffy in THE MEDICAL JOURNAL OF AUSTRALIA, December 17, 1938.

The Council of the Ophthalmological Society of New South Wales took an unprecedented action in issuing a statement to *The Sydney Morning Herald* to correct what it believed to be a false and misleading impression created by a letter to *The Herald* signed "Ophthalmic Surgeon".



Dr. Claffy's letter in your journal is a temperate statement of the position of the operation of keratoplasty, whereas the letter in *The Sydney Morning Herald* made exaggerated and extravagant claims for an operation which the council said has "a definite but limited place in ophthalmic surgery".

I am authorized to state that there would have been no interference by my council if the letter in the Press had been as moderate as Dr. Claffy's remarks in the journal.

If Dr. Claffy feels aggrieved about the council's action, he should reread the statement and see that it was the ill-considered and injudicious letter to *The Sydney Morning Herald* which was rebuked, not the operation.

Yours, etc.,

GRANVILLE WADDY,  
President, Ophthalmological Society  
of New South Wales.

227, Macquarie Street,  
Sydney,  
December 22, 1938.

#### NATIONAL HEALTH INSURANCE.

SIR: In a circular from the National Health Insurance Committee, dated December 13, there are five numbered objections to the Act. In my opinion a most important objection is omitted, namely: "Conditions of service are unacceptable". Country general practitioners will require the imposition of a deterrent night fee and payment of mileage by the patient at the time of the call. If the latter is omitted, our mileage will increase by many hundreds *per centum*, leading to unnecessary driving about the country to the detriment of consulting practice.

Clause IV makes no mention of reduction of the wage or income limit, which, I think, is regarded by the majority of practitioners as being too high.

As it stands at present this statement of objections does not summarize the expressed opinions of those most concerned, the general practitioners.

Yours, etc.,

Young,  
New South Wales,  
December 24, 1938.

#### LOCAL ANÆSTHESIA FOR RETROSTERNAL GOITRE.

SIR: In the December 10 number of the journal (page 998), a very interesting case was reported by Dr. T. M. Furber, in which he used local anæsthesia for the relief of pressure caused by hæmorrhage into a cystic retro-sternal goitre.

I would like to ask Dr. C. E. Corlette, whose method was quoted, if he would reply as to whether local anæsthesia could be used safely to permit of the completion of the operation, that is, the delivery and removal of the retro-sternal portion, or whether he considers it impossible in dealing with such a difficult and deep-lying gland.

This was definitely not an easy type of case, and Dr. Furber deserves credit for his successful handling of a very dangerous condition.

Yours, etc.,

2, Pitt Street,  
Dunedin,  
New Zealand.  
December 22, 1938.

ROLAND A. H. FULTON.

#### Honours.

##### NEW YEAR HONOURS.

HIS MAJESTY THE KING has been pleased to confer the following honours on medical practitioners in Australia:

*Knight Bachelor*: Dr. John Ramsay, C.B.E., of Launceston, Tasmania.

*Companion of the Most Distinguished Order of Saint Michael and Saint George*: Dr. Frank Gordon Scholes, Melbourne, Victoria.

*Commander of the Order of the British Empire* (Civil Division): Dr. James Livingstone Thompson, Melbourne, Victoria.

The congratulations of the medical profession are extended to Sir John Ramsay, Dr. Scholes and Dr. Thompson.

#### Notice.

##### ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THE annual meeting of the Royal College of Physicians of Edinburgh was held on December 1, 1938, when Dr. Alexander Goodall was reelected President, and the following were elected to form the Council for the ensuing year: Dr. Edwin Bramwell, Dr. John D. Comrie, Dr. Charles McNeill, Dr. A. Fergus Hewat, Dr. D. M. Lyon and Dr. A. Graham Ritchie. Dr. Comrie was nominated Vice-President.

At an extraordinary meeting held immediately afterwards, the college conferred its honorary fellowship on Sir Charles Bickerton Blackburn, Kt., O.B.E., M.D., Sydney, first President of the Royal Australasian College of Physicians.

##### CONGRESS OF THE AUSTRALASIAN MASSAGE ASSOCIATION.

We have been asked to make it known to our readers that the second Federal congress of the Australasian Massage Association will be held at Melbourne during the first week of May, 1939. During the congress, lectures and demonstrations will be given at various hospitals. The Australasian Massage Association will welcome any interested members of the British Medical Association who wish to attend.

#### Obituary.

##### KEVIN ALOYSIUS MCCARTHY.

We regret to announce the death of Dr. Kevin Aloysius McCarthy, which occurred on December 24, 1938, at Melbourne, Victoria.

#### Books Received.

THE STUFF WE'RE MADE OF, by W. O. Kermack, M.A., D.Sc., LL.D., and P. Eggleton, D.Sc.; 1938. London: Edward Arnold and Company. Crown 8vo, pp. 350, with illustrations. Price: 7s. 6d. net.

THUS WE ARE MEN, by W. Langdon-Brown, M.A., M.D., F.R.C.P.; 1938. London: Kegan Paul, Trench, Trubner and Company Limited. Demy 8vo, pp. 354. Price: 10s. 6d. net.

MIDWIFERY, by Ten Teachers, under the direction of C. White, M.D., B.S., F.R.C.P., F.R.C.S., F.C.O.G., edited by C. Berkeley, C. White and F. Cook; Sixth Edition; 1938. London: Edward Arnold and Company. Demy 8vo, pp. 388, with illustrations. Price: 12s. net.

COLLECTED PAPERS OF THE WALTER AND ELIZA HALL INSTITUTE OF RESEARCH IN PATHOLOGY AND MEDICINE, MELBOURNE: Volume IX; 1938. Melbourne: The Walter and Eliza Hall Institute. Crown 4to.

**GENERAL PRACTICE SERIES. CARDIOVASCULAR DISEASE IN GENERAL PRACTICE**, by T. East, M.A., D.M., F.R.C.P.; 1938. London: E. K. Lewis and Company Limited. Demy 8vo, pp. 216, with 48 illustrations. Price: 10s. 6d. net.

**CHRONIC DISEASES OF THE ABDOMEN: A DIAGNOSTIC SYSTEM**, by C. J. Marshall, M.S., M.D., F.R.C.S.; 1938. London: Chapman and Hall Limited. Royal 8vo, pp. 265, with illustrations. Price: 55s. net.

**WHITLA'S DICTIONARY OF TREATMENT, INCLUDING MEDICAL AND SURGICAL THERAPEUTICS**, by R. S. Allison, M.D., M.R.C.P., and C. A. Calvert, M.B., B.Ch., F.R.C.S.I.; Eighth Edition; 1938. London: Baillière, Tindall and Cox. Demy 8vo, pp. 1293. Price: 30s. net.

**CANCER AND TUBERCULOSIS IN MELBOURNE AND SUBURBS**, by T. Cherry, M.D., M.S.; 1938. Melbourne: Melbourne University Press. Crown 4to, pp. 30. Price: 2s. net.

**ORGANIC AND BIO-CHEMISTRY**, by R. H. A. Plimmer, D.Sc.; Sixth Edition; 1938. London: Longmans, Green and Company. Royal 8vo, pp. 633, with illustrations. Price: 21s. net.

**TUBERCULOSIS IN CYPRUS: AN INTERIM REPORT ON ITS INCIDENCE AND MEANS OF CONTROL MADE UNDER THE AUSPICES OF THE NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS**, by N. D. Bardawell, M.V.O., M.D., F.R.C.P., F.R.S.; 1937. London: Adlard and Son Limited, for the National Association for the Prevention of Tuberculosis. Crown 4to, pp. 324, with illustrations.

**CLINICAL OBSTETRICS**, by A. L. Mudaliar, B.A., M.D., F.C.O.G.; 1938. Edinburgh: Oliver and Boyd. Medium 8vo, pp. 330, with illustrations. Price: 27s. net.

## Diary for the Month.

- JAN. 10.—New South Wales Branch, B.M.A.: Council (Quarterly).  
 JAN. 12.—South Australian Branch, B.M.A.: Council.  
 JAN. 13.—Queensland Branch, B.M.A.: Council.  
 JAN. 25.—Victorian Branch, B.M.A.: Council.  
 JAN. 27.—Queensland Branch, B.M.A.: Council.  
 FEB. 1.—Victorian Branch, B.M.A.: Branch.  
 FEB. 1.—Western Australian Branch: Council.  
 FEB. 2.—South Australian Branch, B.M.A.: Council.  
 FEB. 3.—Queensland Branch, B.M.A.: Branch.  
 FEB. 7.—New South Wales Branch, B.M.A.: Organisation and Science Committee.  
 FEB. 10.—Queensland Branch, B.M.A.: Council.  
 FEB. 14.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 FEB. 21.—New South Wales Branch, B.M.A.: Ethics Committee.  
 FEB. 22.—Victorian Branch, B.M.A.: Council.  
 FEB. 23.—South Australian Branch, B.M.A.: Branch.  
 FEB. 24.—Queensland Branch, B.M.A.: Council.  
 FEB. 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.

## Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xviii to xx.

AUSTIN HOSPITAL FOR CANCER AND CHRONIC DISEASES, HEIDELBERG, VICTORIA: Honorary Psychiatrist.

BRISBANE AND SOUTH COAST HOSPITALS BOARD, QUEENSLAND: Medical Officer.

DEPARTMENT OF PUBLIC HEALTH, PERTH, WESTERN AUSTRALIA: Medical Officers.

DEVON PUBLIC HOSPITAL, LATROBE, TASMANIA: House Surgeon.

McKINLAY HOSPITALS BOARD, JULIA CREEK, QUEENSLAND: Medical Officer.

MUNICIPALITY OF PORT CYGNET, TASMANIA: Medical Officer.

THE UNIVERSITY OF MELBOURNE, VICTORIA: Senior Lectureship in Pathology.

UNIVERSITY OF OTAGO, DUNEDIN, NEW ZEALAND: Lecturer in Biochemistry.

VICTORIAN EYE AND EAR HOSPITAL, MELBOURNE, VICTORIA: Resident Medical Superintendent.

WESTERN AUSTRALIAN PUBLIC SERVICE: Junior Medical Officers.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmans United Friendly Societies' Dispensary. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
NEW SOUTH WALES: Honorary Secretary, 185, Macquarie Street, Sydney.	
VICTORIAN: Honorary Secretary, Medical Society Hall, Esplanade, Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. House, 335, Wickham Terrace, Brisbane, B.17.	Brisbane Associate Friendly Societies' Medical Institute. Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 178, North Terrace, Adelaide.	All Lodge appointments in South Australia. All contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognise any claim arising out of non-receipt of journals unless such a notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £3 for Australia and £5 5s. abroad per annum payable in advance.